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TECHNICAL MEMORANDUM

To: Mr. Andrew Miller **RVA:** 215632.01

From: Andrew McGregor, MCIP, RPP - Senior Planner, EA & Approvals

Date: May 14, 2024

Subject: Wyndham Street Schedule B Municipal Class Environmental Assessment – Recommendations Summary Technical Memorandum – Final

1.0 BACKGROUND

The City of Guelph has completed a Municipal Class Environmental Assessment (Class EA) for improvements to Wyndham Street North from Carden Street to Woolwich Street (intersections included). The study considered options for the Wyndham Street corridor cross-section as well as the configuration of the Wyndham / Quebec / Douglas / Intersection & St. George's Square. Initiated in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B', the study was later reclassified to Schedule A+ or Exempt, following review of the alternative solutions developed in Phase 2 of the study.

This technical memorandum is provided to summarize the recommendations developed for the Wyndham Street corridor and St. George's Square. Supporting studies and documentation completed (or still in progress) in the development of the recommendations are included as attachments to the Tech Memo.

2.0 POLICY VISION FOR WYNDHAM STREET AND ST. GEORGE'S SQUARE

As planned development in the City of Guelph's Downtown continues, the need to reconstruct Wyndham Street has been considered in several documents. These studies considered not only the measures required to address the long-term transportation requirements of Wyndham Street, but also the function of the main street at the heart of the Downtown core, as described below.

The reconstruction of Wyndham Street is guided by strategies and plans that have been approved by Council. Downtown Renewal considers the strategic direction and the objectives of many corporate plans, including the Downtown Secondary Plan (2012) / Consolidated Official Plan (2018), 2014 Streetscape Manual (2014), and the Transportation Master Plan (2022). These studies considered not only the measures required to address the long-term transportation requirements of Wyndham Street, but also the function of the main street at the heart of the Downtown core.

One of the goals of the EA was to revisit earlier concepts to ensure that it can work safely and achieve the policy aspirations established in the Secondary Plan to regain St. Georges Square as a place for people, offer a broader range of programming opportunities, and support ongoing downtown vitality and revitalization efforts.

2.1 Downtown Secondary Plan (2012) / Consolidated Official Plan (2018)

Within the City's Downtown Secondary Plan (2012), and the City's Consolidated Official Plan (2018), Wyndham Street is classified as a Downtown Main Street, which should be considered "pedestrian and transit priority streets" and have the following characteristics:

- The zones for pedestrians on these streets should be a minimum of six metres wide on both sides, where possible.
- On-street parking should be permitted north of Carden Street to support local business and provide a buffer between pedestrians and moving traffic; and
- Dedicated bike facilities should be accommodated where necessary based on the function of the roadway.

2.2 2014 Streetscape Manual (2014)

Building on the 2012 Downtown Secondary Plan, the 2014 Streetscape Manual focuses on the function of Wyndham Street as a public space and seeks to give equal prioritization to all modes of transportation to provide wide boulevards, on- street parking and shared travel lanes with no curbs. The manual also includes the redesign of St. George's Square as a central gathering square with a traffic circle around the periphery.

2.3 Transportation Master Plan Update (2022)

Completed in 2022, Guelph's 2022 Transportation Master Plan (TMP) update, lays out how residents and visitors will move through the city over the next three decades. The TMP classifies Wyndham Street North within the study area as a Downtown Main Street, and recommends the following improvements within the study area:

- On-Street Spine Cycling Network (off-road protected facility - all ages and abilities);
- Quality Transit Network-potential Lane conversion of existing travel lanes; and
- Pedestrian Priority Network: wide sidewalks and high-quality walking environments

No recommendations are explicitly stated for St. George's Square, however, the recommendations discussed above are recommended to be carried through the Wyndham / Douglas / Quebec Streets intersection.

2.4 Additional Ongoing Relevant Planning Documents

It is understood that the Downtown Parking Master Plan and Solid Waste Master Plan are currently underway and will set out additional requirements for the Wyndham Street corridor right-of-way.

3.0 EXISTING CONDITIONS

In order to adequately identify, develop and evaluate alternative solutions, a thorough understanding of the existing conditions with the study area was required.

As such, various technical studies were undertaken to assess the existing conditions of the study area, including: Natural Environment Existing Conditions Assessment, Cultural Heritage Resource Assessment (Existing Conditions), Stage 1 Archaeological Assessment: Baseline Conditions, Transportation Existing Conditions Assessment, and Topographic Survey. As part of the Downtown Guelph Capital Implementation Plan, a Subsurface Utility Engineering (SUE) Survey and Geotechnical Survey were also carried out on the Wyndham Street corridor. The findings of these studies were incorporated into the evaluation of alternative solutions.

An *Existing Conditions Technical Memorandum* summarizing the existing conditions within the study area as it pertains to the natural, archaeological and cultural heritage, transportation, and topographical environments is provided in Attachment 1.

4.0 NEED AND JUSTIFICATION

The Wyndham Street corridor within the study area is a downtown main street corridor vital to the accessibility, local economy, and placemaking of Downtown Guelph. Furthermore, the Wyndham / Quebec / Douglas intersection offers an opportunity for a public square. As such, this corridor has been a focus of the Downtown Infrastructure Renewal Program.

The need and justification for the Wyndham Street Municipal Class EA (Wyndham Street EA) was developed out of the road capacity and intersection recommendations identified in the Downtown Streetscape Manual 2014, as well as the planned densification and improvements associated with the planned Baker District Redevelopment.

The Downtown Streetscape Manual, 2014 identifies opportunities to create streets that provide an attractive, accessible and safe environment for all modes of transportation (pedestrian, cycling, transit and vehicular). Operational improvements identified within the study area include reducing Wyndham Street from four to two lanes to create a flexible street and introducing a traffic circle at the Wyndham / Quebec / Douglas intersection, creating a public square in the St. George's Square area.

Per the Problem and Opportunity Statement summarized in the Technical Memorandum in Attachment 2, the scope of the Wyndham Street EA was identified as potential capacity changes and intersection improvements from Carden Street to Woolwich Street that is comprised of the following key elements:

- Enhance road safety, operations, and connectivity for all users including vehicles, pedestrians, cyclists, and transit; and
- Improve the St. Georges Square at the Wyndham/Quebec/Douglas intersection geometrics and operations in order to enhance traffic operations and safety for all users.

It should be noted, however that through the course of the EA, operational improvements, specifically to the Wyndham/Quebec/Douglas intersection, were viewed as secondary to improving its function in terms of enhancing the public realm, as per previous policy direction set out in the Secondary Plan.

4.1 EA Phase 1 Public Engagement

The following engagement activities were undertaken as part of Phase 1 of the Wyndham Class EA:

- August 2021 - Notice of Commencement
- August 2021 – A Downtown Merchants Meeting brought together 24 business representatives to introduce the project and discuss concerns relating to construction early in the process.

  Feedback highlighted the top concerns related to restricted access to brick-and-mortar businesses, reduced customer foot traffic, loss of parking and detours.

- August – September 2022 -Three pop-up events and a Have Your Say (HYS) Survey engaged over 380 individuals in learning about the project and providing their preferences.

  Participants ranked street trees and greenspace and flexible streets as the top two priorities, followed by cycling infrastructure, access to businesses and amenities, improved St. George's Square, transit, and parking. Loading zones, drainage and stormwater were the lowest ranked.

5.0 WYNDHAM STREET CORRIDOR AND ST. GEORGES SQUARE ALTERNATIVES

All reasonable solutions to address the problem and opportunity statement were considered, including the "Do Nothing" alternative. A long list of options were initially developed and presented to the public at the first Public Open House and were distributed to City staff for review following a workshop with City staff (see Short List Technical Memorandum in Attachment 3).

Cross-section alternatives for the corridor focused on the number of traffic lanes, and order of cyclist facilities, as these items are expected to be the main differentiator and dictate the space available within the rest of the right of way for parking, flexible use, marketing, and planting / furnishing zones. Alternative configurations for the Wyndham/Quebec/Douglas intersection considered operational improvements, improvements to the public realm as well as reinstating St. George's Square as a central plaza.

5.1 EA Phase 2 Public Engagement

The following engagement activities were undertaken as part of Phase 2 of the Wyndham Class EA:

- November 2022 – The first public open house and HYS survey engaged over 200 individuals in sharing their thoughts on the opportunity, goals, and preferences on a long list of options for the corridor and St. George's Square intersection.

  Results for the corridor highlighted that Option 4: Public Space was the highest ranked. Followed by Option 2c: Two lanes with cycle track; Option 2b: Two lanes with buffered bike lanes; Option 3: Four lanes with cycle track; Option 2a: Two lanes with shared use; and Option 1: Do nothing. Results for the intersection ranked Option 6: Public Space highest followed by Option 5: Traffic circle; Option 2: Standard intersection improvements; Option 3: Realign 4-leg intersection; Option 4: Roundabout and last Option 1: Do nothing.

- February 2023 - Staff Shortlist Workshop – Staff participated in a workshop to identify a shortlist for detailed evaluation. Through the process, the final Wyndham corridor shortlist for evaluation included Do Nothing, Two-lanes with Shared Use and Angled Parking on One Side of Street, Two-lanes with Uni-directional Bike Path, Two-lanes with Bidirectional Bike Path The final St. George's Square intersection shortlist options included Do Nothing, Standard Intersection Improvements, Realigned Four-leg Intersection, and Traffic Circle.

- June 2023 - Participation at the Multicultural Festival to share information about the project.

- June and July 2023 - Tactical urbanism event and HYS survey engaged over 480 individuals (including 138 survey responses) in a life-size model of how the street could look and feel to gather more input on which road conditions felt the safest. Three road conditions – (1) no bike path, (2) uni-directional bike path or (3) bi-directional bike path - were assessed with the public. Additionally, participants could view and comment on options for St. George's Square.

  Respondents felt most comfortable in Condition 2: Uni-directional bike path in all modes.

- September 2023 – The second public open house and HYS survey engaged over 180 individuals in commenting on the two lane with uni-directional bike path recommendation for the corridor and providing input to the selection of the intersection configuration from three options – (1) standard improvements, (2) re-alignment and (3) traffic circle (central square).

  Overall feedback supported the street corridor design recommendation as it prioritizes pedestrian and cyclist-friendly features, reducing car traffic and creating a more vibrant downtown space. However, there are differing opinions regarding the role of on-street parking and how best to accommodate various modes of transportation.

- Regarding the intersection design, participants ranked the elements that best serve the community and shared feedback on what was liked most and least for each option. Enhanced pedestrian safety through the intersection ranked highest, followed by placemaking, protecting cyclists, slowing traffic and improving business service access. Construction costs, retaining parking and allowing efficient traffic flow ranked the lowest.

    - Re: Option 1- standard improvements – Most survey respondents felt this solution was not a significant change from the current layout. They felt the proposed changes prioritized vehicular traffic, lacked inspiration, and did not address current issues. Respondents indicated this was potentially the simplest, most cost-effective, or inexpensive option. They envisioned minimal construction impacts compared to the other options. While some identified positive elements and a few supported this option as preferred, the majority identified it as the least supported solution.

- Re: Option 2- Re-aligned four-leg intersection - Some participants preferred this option as it simplifies the intersection, protects pedestrians and cyclists, increases overall safety, and retains some opportunities for placemaking in public spaces. Some viewed it as allowing traffic to flow well through the intersection and Douglas Street.

- Re: Option 3- Traffic circle (central square) - Overall, this option generated the most discussion. While many comments were positive, those strongly opposed also shared their views. For some, this is preferred as an opportunity for placemaking downtown. It provides a safe, interesting, and functional solution that prioritizes pedestrians while provides a unique public space and placemaking opportunity for the city. Others who did not support this option had concerns that it creates potential confusion and safety issues for users of the traffic circle. Some felt the traffic circle is not appropriate in this location of the city and would prefer to see them in less populated areas. Some felt that the public space inside the traffic circle was too small for most events, it may have barriers to access, and limited programmed activities.

- September 2022- September 2023 - DGBA Board member meetings (4) were held to introduce the project and gather insights before public consultation activities. Feedback from the DGBA is captured within each engagement summary report. Early input included considering the functionality of the design as this is a commercial district; addressing core needs of the business community such as on-street parking, access for deliveries, and activation; creating a destination downtown, accounting for economic vitality in the design and creating connectivity to all areas outside the Square. In reviewing the shortlist of options for the corridor, DGBA members shared concern that including bike lanes reduces the patio space. They recommended slowing traffic as much as possible and reiterated the need to consider the day-to-day operation of businesses. DGBA Board members were not supportive of the recommended corridor design. They felt the recommendation limited parking access for businesses and residences to accommodate cycling during the limited summer months. The presence of bike lanes and cyclist traffic concerned the DGBA Board, who identified that most people drive downtown. They believe that vehicle access and parking must be prioritized for their businesses to thrive and for this area to become a commercial center. The DGBA would like to ensure the City's Parking Master Plan is appropriately considered and that loading zones can be accommodated along Wyndham.

  For the shortlisted intersection options, DGBA members had initial concerns that the traffic circle might encourage pedestrians away from businesses, reduce parking, and negatively impact truck traffic flow. Of the options, DGBA Board members were supportive of Option 1: Standard improvements as it is desirable for pedestrians due to the intersection not being closed off, as it would allow them to stroll and encourage free movement. Options 2: Realigned four leg intersection was viewed as desirable for pedestrians due to the intersection not being closed off, as it would

allow them to stroll and encourage free movement. There was concern about realigning towards Douglas Street, as it is currently a unique part of the city and "nook" with a lot of charm. Switching traffic directions would not be an additional benefit. One comment stated that downtown was a great space already and that there are other ways to create a sense of place and reconfigure elements for use.

For Option 3: Traffic circle, the DGBA expressed concern that the space in the middle would fail to be programmed effectively and actively, potentially becoming a site for encampments. They expressed uncertainty about the effectiveness of the traffic circle in slowing vehicle speeds, raising concern for pedestrian safety. The increase in events downtown due to this intersection option was a concern for the DGBA should events extend across multiple days and take away from day-to-day uses. They noted the traffic circle may have a negative impact on events such as the Santa Claus parade.

6.0 STUDY RECOMMENDATIONS

Following approval of the recommended short-list by the City, the project team undertook an evaluation of the options for the Wyndham Street corridor and Wyndham / Douglas / Quebec intersection (St. George's Square) based on criteria representing the broad definition of the environment as described in the EA Act. The criteria are described in detail in the *Short List Technical Memorandum* in Attachment 3. Each of the alternatives were ranked from least desirable to most desirable, against each of the criteria. The corridor recommendations and intersection options were presented to the Downtown Guelph Businesses, followed by the public, at the Second Public Open House. The input received from the business stakeholders and members of the public were considered in the identification of the preferred solution.

6.1 Wyndham Street Corridor

Based on the comparative evaluation of the shortlisted options developed for the Wyndham Street Corridor, input received from local businesses and the public, as well as strategies and plans that have been approved by Council, Wyndham Street corridor is recommended to be reconstructed to a two lane cross section (one lane of traffic in each direction), with uni-Directional Bike Paths (or cycle tracks) along both sides of the road (see Figure 6-1).

Key features of the proposed corridor include:

- Widened sidewalks to accommodate pedestrians and protected bike paths to safely accommodate cyclists of various abilities.
- Provides for loading zones and parking for a similar number of vehicles as current, while maintaining on-street access to businesses.

- Introduces a formalized planting / furnishing zone, providing permanent space for flexible uses to create an improved pedestrian zone along both sides of the corridor.
- Can accommodate additional space for seasonable flexible uses (e.g Patio program), if desired, by shifting the bike path to the parking area (Figure 6-2 below).
- Total cost is approximately $18 million.

Further details of this option will be confirmed through the detailed design phase.

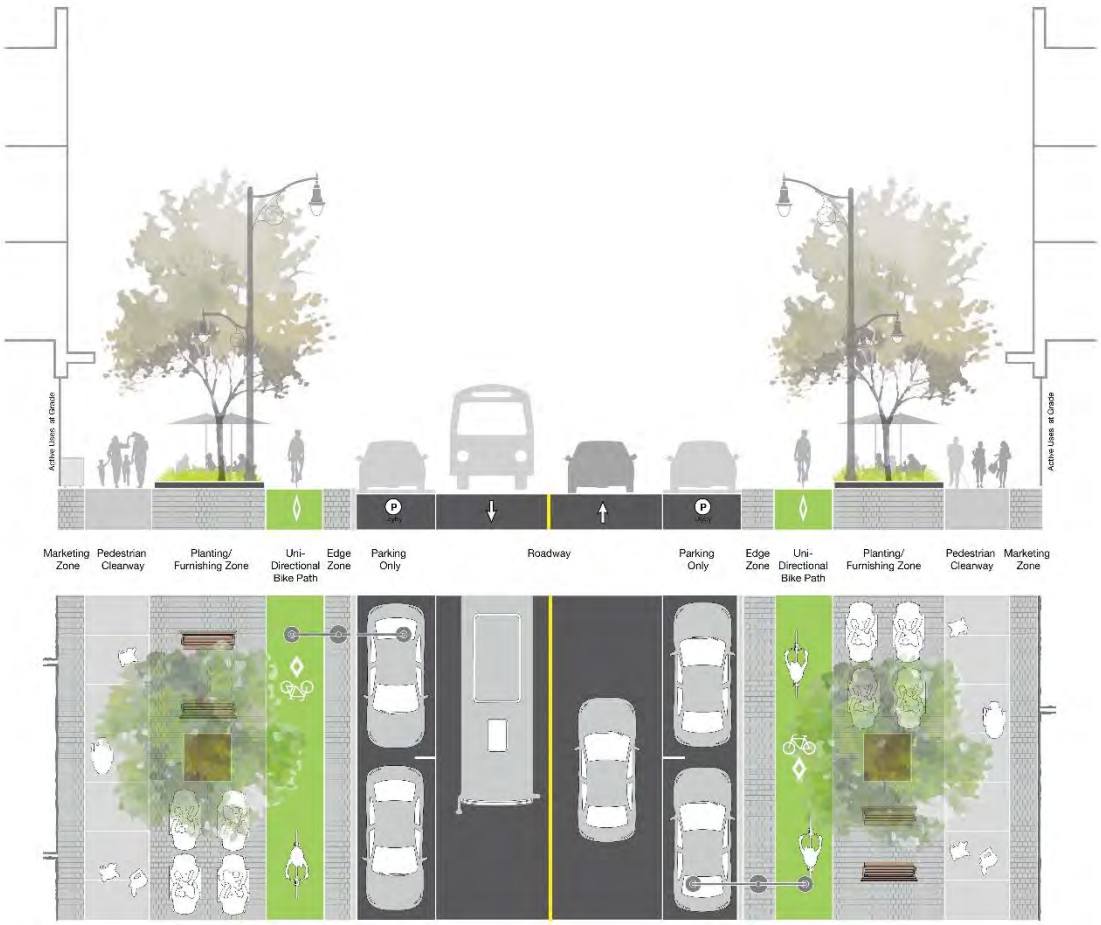

Figure 6-1: Two-lanes with Uni-Directional Bike Path

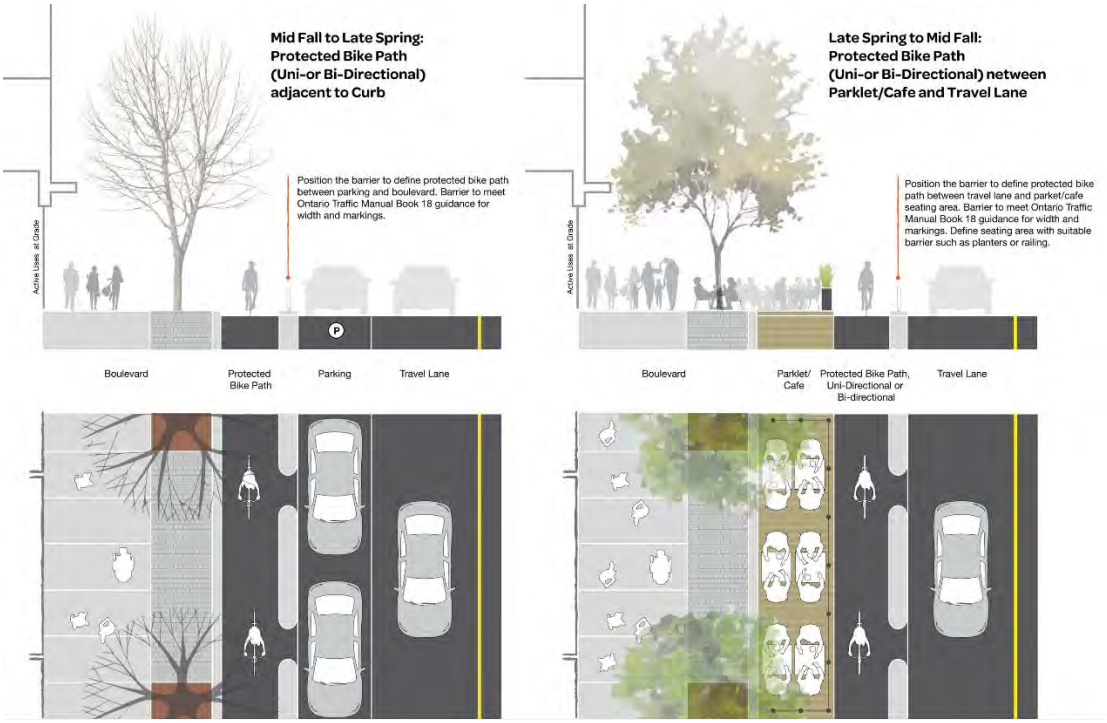

Figure 6-2: Potential Seasonal Patio Configuration

The recommended configuration developed for the Wyndham Street corridor provides a safe and equitable street for all road users that addresses the City's long - term transportation requirements of Wyndham Street, but also the function of the main street at the heart of the Downtown core.

Feedback received from the public generally support the recommended corridor design, noting that it prioritizes a pedestrian and cyclist-friendly environment, reduces car traffic and creating a more vibrant downtown space.

6.2 Wyndham/Douglas/Quebec Intersection (St. Georges Square)

Following approval of the recommended short-listed options, the project team undertook an evaluation of 3 options for Wyndham/Douglas/Quebec intersection based on criteria representing the broad definition of the environment as described in the EA Act. The criteria are described in detail in the *Short List Technical Memorandum* in Attachment 3. Each of the alternative intersection configurations were then ranked from least desirable to most desirable, against each of the criteria, to determine the recommended intersection configuration. The options were presented to the DGBA, followed by the public, at the Second Public Open House. The input received from the business stakeholders and members of the public were considered in the identification of the preferred solution.

Based on information derived from the comparative evaluation of the shortlisted options , input received from the public and DGBA, as well as through direction provided by the City, the offset intersection option with operational improvements (Figure 6-3) is recommended to be carried forward for further refinement through the detailed design phase. This option is similar to existing conditions, but with operational improvements and separated unidirectional bike paths.

Figure 6-3: Recommended Intersection Configuration

Highlights of the recommended configuration include:

- Similar operations to existing condition but with fewer travel lanes on Wyndham Street, reduced on street parking, improved geometric design (e.g., narrower Douglas Street), and optimized signal timing (to be determined through detailed design).

- Improved safety for pedestrians via marked crossings (cross rides) at all streets, with the Douglas Street crossing pulled into the functional intersection area (becoming a controlled crossing) by shifting the crossing at the north leg further north.
- Cyclists accommodated via protected bike paths carried through intersection and cross rides to replace existing pedestrian-only crossings. Crossing at Douglas Street would become a controlled crossing (by traffic signal).
- Maintains existing public space arrangement, providing an opportunity to build upon a familiar design but with slightly larger spaces (narrower Wyndham and Douglas Streets).
- Total cost is approximately $13 million.

All of the identified intersection configurations were determined to satisfy the City's requirements from an operations and safety perspective, with varying degrees of impact to the surrounding socio-economic, cultural and natural environment, and overall cost. From a public engagement perspective, no clear preference for St. George's Square emerged from the options presented. However, it should be noted that those opposed to the traffic circle option were adamantly opposed.

Given the lack of preference from the public for a particular option, lower construction cost (approx. $3M lower than the traffic circle option), familiarity with the existing conditions, and potentially high opposition to a traffic circle, City staff were more in favor of reconstructing the intersection based on current geometrics, with some operational improvements plus separated unidirectional bike paths aligned with the Transportation Master Plan Cycling Spine Network.

Maintaining the current intersection configuration with minor operational improvements would provides for adequate functionality from a traffic operations and safety perspective, while also serving to satisfy the City policy aspirations of making St. Georges Square a place for people, and support the City's ongoing downtown vitality and revitalization efforts.

6.3 Committee of the Whole and Council Approval

The recommendations developed for the Wyndham Street corridor and the Wyndham/Douglas/Quebec Intersection (St. Georges Square) were unanimously approved by City's Committee of the Whole on February 6th, 2024 and passed by Council on February 27th, 2024.

ATTACHMENT 1

Existing Conditions

Wyndham Street Municipal Class EA

Existing Conditions Technical Memorandum

Prepared for:
City of Guelph

RVA 215632.01

April 18, 2022

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April 18, 2022 RVA 215632.01

City of Guelph
1 Carden Street
Guelph, ON N1H 3A1

Attention: David Di Pietro

Dear David:

Re: Wyndham Street Schedule B Municipal Class Environmental Assessment Draft Existing Conditions Technical Memorandum

Please find enclosed the Draft Existing Conditions Technical Memorandum for the Wyndham Street Municipal Class Environmental Assessment (Schedule B), completed by R.V. Anderson Associates Limited.

If you have any questions, please do not hesitate to contact the undersigned by email or at 905-685-5049 ext. 4211.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED

Andrew McGregor, MCIP, RPP
Senior Planner, EA & Approvals

Copied to: Nick Palomba, P.Eng. – R.V. Anderson Associates Ltd.
Connor MacIsaac, EPt. – R.V. Anderson Associates Ltd.
Reg Russwurm, P. Eng. – City of Guelph
Steven Di Pietro. P. Eng. – City of Guelph

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APPENDICES

1.0 INTRODUCTION

The City of Guelph has initiated a Municipal Class Environmental Assessment (Class EA) for improvements to Wyndham Street from Carden Street to Woolwich Street. The study will consider options for the Wyndham Street corridor, including lane reduction from four to two lanes, and the implementation of a traffic circle in St. George's Square.

The study area consists of Wyndham Street North from Carden Street to Woolwich Street (intersections included), a distance of approximately 500m, as illustrated in **Figure 1**.

The report summarizes the existing conditions within the study area as it pertains to the natural, archaeological and cultural heritage, transportation, topographical environments. These will be incorporated into the evaluation of alternative solutions in Phase 2 of the Wyndham Street Class EA.

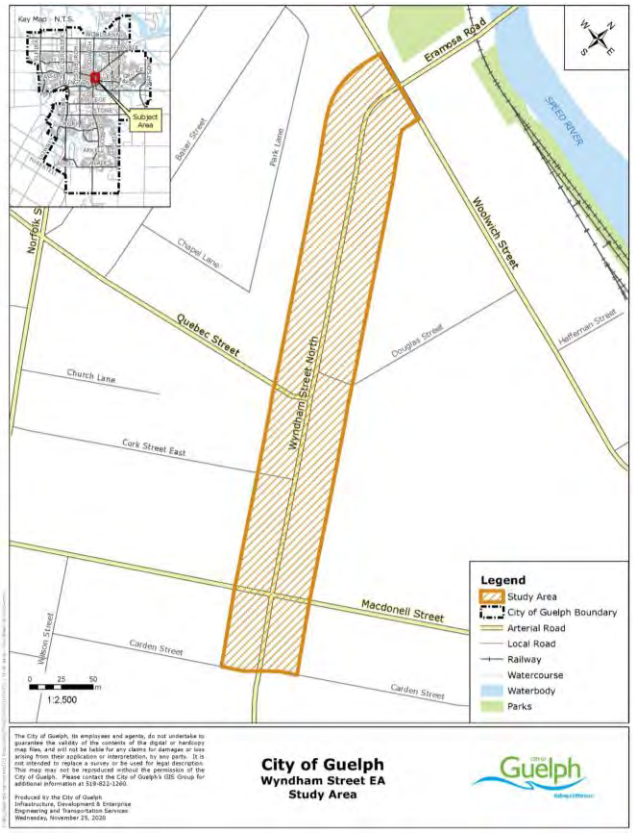

Figure 1 – Wyndham Street Class EA Study Area

2.0 EXISTING CONDITIONS

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity statement will be identified and evaluated, including the "Do Nothing"

alternative. In order to adequately identify, develop and evaluate these alternative solutions, a thorough understanding of the existing conditions with the study area is required.

As such, various technical studies were undertaken to assess the existing conditions of the study area, including: Natural Environment Existing Conditions Assessment, Cultural Heritage Resource Assessment (Existing Conditions), Stage 1 Archaeological Assessment: Baseline Conditions, Transportation Existing Conditions Assessment, and Topographic Survey. As part of the Downtown Guelph Capital Implementation Plan, a Subsurface Utility Engineering (SUE) Survey and Geotechnical Survey were also carried out on the Wyndham Street corridor.

The findings of these studies will be incorporated into the evaluation of alternative solutions.

2.1 Natural Environment

As a component of the Environmental Impact Study and in advance of field investigations, a desktop review of the existing natural environment was completed by RVA's Ecological Services Group. A full copy of Natural Environment Existing Conditions Assessment Technical Memorandum is located in **Appendix 1.**

The findings of the Natural Environment Existing Conditions Assessment will be used to evaluate the short- and long-term ecological impacts associated with implementing each of the Alternative Solutions (Phase 2 EA). The Natural Environment Existing Conditions Assessment will then be updated through a comprehensive field program to identify impacts and mitigation measures associated with implementing the Preferred Solution, in an Environmental Impact Statement (EIS). The EIS will conform to Guidelines for the Preparation of Environmental Impact Studies (City of Guelph, ver 2 April 2020).

Key findings of the Natural Environment Existing Conditions Assessment are summarized below.

2.1.1 Aquatic Habitats and Communities

Within the vicinity of the Wyndham Street corridor, the Speed River, a cool water fish habitat, flows southeast adjacent to the northern extent of the study area. Due to the study area being approximately 70 meters from the Speed River, impacts to the watercourse are not anticipated. Given the setback from the watercourse, and the absence of aquatic SAR, an aquatic habitat assessment and fish inventory will not be required for the Speed River as part of this assignment.

2.1.2 Wildlife & Wildlife Habitat

The study area is highly urbanized, with the natural environment consisting primarily of ornamental trees on City property. The study area was reviewed for breeding birds, herpetofauna, mammals, and insects. In addition, a preliminary screening of Significant Wildlife Habitat (SWH) was completed.

While no targeted field surveys are planned for wildlife, incidental observations of wildlife, including call and signs, will be recorded during each site visit. If rare or significant wildlife species are observed, their location(s) will be recorded.

2.1.3 Vegetation and Trees

The background review did not identify any significant plant species within the vicinity of the Study Area, however a number of street trees are present within the study area.

RVA will undertake field investigations in the early summer of 2022 to carry out Ecological Land Classification (ELC) for vegetation communities, a single-season floral inventory, and a detailed tree inventory and preservation plan. The tree inventory will be used to develop a Preservation Plan to mitigate impacts to the trees associated with implementing the preferred solution.

2.1.4 Designated Natural Areas

A Natural Heritage System associated with the Speed River, northeast of the Wyndham Street corridor is designated as a Significant Natural Area as per Schedule 4: Natural Heritage System of the City's Official Plan which includes Significant Valleylands (Schedule 4D) and Significant Wildlife Habitat (Schedule 4E).

It is noted that the study area is approximately 70 meters from the Speed River. No additional Designated Natural Areas were noted by agencies or located during the background review.

2.1.5 Field Program

Based on the gaps identified during the desktop background review, the proposed field investigations required to complement the existing inventory of the natural environment and to characterize the natural heritage features within study area are summarized in

Table 1.

Table 1 – Natural Environment Field Investigations Schedule

Survey Type	Schedule	Level of Effort
Ecological Land Classification	June – August 2022	Single Season Site Visit
Early Summer Floral Inventory	June – August 2022	Single Season Site Visit
Tree Inventory	TBC	Single Season Site Visit
Wildlife Habitat	June – August 2022	Single Season Site Visit

2.2 Cultural Heritage Resources

As a component of the Cultural Heritage Resource Assessment (CHRA), a desktop review of the Cultural Heritage resources within the study area was undertaken to identify previously identified known and potential cultural heritage resources (CHRs) and Cultural Heritage Landscapes (CHL). The complete Cultural Heritage Report: Desktop Results is provided in **Appendix 2**.

The Wyndham Street EA study area is largely located within the Old Downtown Candidate CHL and the north end of the study area is located within the Woolwich Street Candidate CHL. Known CHRs in the study area include 5 properties Designated under Part IV of the *Ontario Heritage Act,* and 23 properties listed on the *City of Guelph Municipal Heritage Register.* Two previously identified CHRs within the Study Area have been demolished. Key findings of the background research and desktop data collection are summarized in **Table 2**.

Table 2 – Known and Potential Cultural Heritage Resources

Address/Location	Heritage Status
Old Downtown Candidate CHL	Potential CHR - Identified as a candidate CHL in the Cultural Heritage Action Plan

Address/Location	Heritage Status
Woolwich Street Candidate CHL	Potential CHR - Identified as a candidate CHL in the Cultural Heritage Action Plan
176 Wyndham St N	Demolished
166 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
160-164 Wyndham St N	Demolished
146-150 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
138 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17979)
120 -126 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
116-118 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
110-114 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
102 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
98 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
147-159 Wyndham St N (Wellington Hotel)	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1979)-10057); Subject to a conservation easement by the Ontario Heritage Trust
137-145 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
133 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17980)
125 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
123-125 Wyndham St N	Known CHR - Listed on Municipal Heritage Register

Address/Location	Heritage Status
115-121 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
107-109 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
101-109 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
97-99 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
93 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
16-18 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
12 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1979)-10190)
41 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
37-43 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
29-35 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
27 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
19-25 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
15 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1990)-13553)
8-10 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
1-5 Wyndham St N	Known CHR - Listed on Municipal Heritage Register

The Cultural Heritage Report: Desktop Results will be updated in a Cultural Heritage Resource Assessment, including field visits, following the selection of a preferred alternative solution to assess the impacts of the proposed undertaking in consideration of its determined cultural heritage value and to develop appropriate mitigation measures.

2.3 Stage 1 Archaeological Assessment: Baseline Conditions

As a component of the Stage 1 Archaeological Assessment, a Baseline Conditions Report of the study area was completed as part of the EA to determine the archaeological potential of the study area. The complete Stage 1 Archaeological Assessment: Baseline Conditions report is provided in **Appendix 3**.

It was determined that the study area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites within 1 kilometer;
- Water sources: primary, secondary, or past water source (Speed River, Grand River Watershed);
- Early transportation routes (Wyndham Street, Woolwich Street, Macdonell Street, Quebec Street, Norfolk Street);
- Proximity to early settlements (City of Guelph, St. George's Church, Public Burying Ground); and
- Well-drained soils (Guelph loam, Burford loam).

Background research indicates that the original location of St. George's Church within St. George's Square exhibits deeply buried archaeological potential. The nature of potential and ASI's recommendations in this area are still being determined but may require construction monitoring to identify any archaeological material associated with the church. These areas are highlighted in yellow in **Figure 2**.

Figure 2 - Deeply Buried Archaeological Potential

The Stage 1 Archaeological Assessment: Baseline Conditions report will be updated as a comprehensive Stage 1 archaeological assessment, including a detailed property inspection, following the selection of a preferred alternative solution (Phase 2 EA). The complete Stage 1 Report will identify areas requiring further assessment and appropriate survey methods, as per the 2011 Standards and Guidelines for Consultant Archaeologists (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI, 2011).

2.4 Existing Traffic and Transportation Conditions

As a component of the Traffic Impact Study (TIS), an Existing Traffic and Transportation Conditions Assessment, documenting the existing multi-modal transportation conditions within the study area was prepared by RVA's Transportation Planning Group. A full copy of this assessment is provided in **Appendix 4.**

The findings of the Transportation Existing Conditions Assessment will be used to evaluate the short- and long-term transportation impacts associated with each of the Alternative Solutions to be identified during Phase 2 of the Class EA. The Existing Conditions Assessment will then be updated to identify impacts and mitigation measures

associated with implementing the Preferred Solution in a comprehensive Traffic Impact Study.

Key findings of the Transportation Existing Conditions Assessment are summarized below.

2.4.1 Roadway Configuration

Wyndham Street North is a north-south oriented road classified as a Downtown Main Street under the jurisdiction of the City of Guelph. The majority of Wyndham Street North has an urban 4-lane cross section (two lanes per direction) with parallel on-street parking.

As part of the Seasonal Patio Program, between April and October 2021, Wyndham Street between Carden Street and Cork Street was closed to vehicle traffic every Friday at 9 a.m., reopening at 5 a.m. on Monday, with no on-street parking to allow for a seasonal patio program. During the week, the patios remained in place, with no on-street parking allowed, however the road operated as a 2-lane (one lane in each direction) as shown in **Figure 3**. At this time, the Seasonal Patio Program is approved to continue through 2023. Whether the seasonal road closures will continue, and the extent of these potential road closures beyond the currently approved Seasonal Patio Program is not currently known.

Figure 3 – Wyndham Street at Macdonell Street Seasonal Patio Configuration

2.4.2 Study Area Intersections

The turning movements, capacity, collision history, and 2051 capacity of each intersection were analyzed. A detailed breakdown of the findings are provided in **Appendix 4** and summarized below**.**

Intersection capacity analysis completed for the study area intersections under weekday AM, PM and Saturday Midday peak hours, indicates that all intersections are currently operating satisfactorily with no critical movements. Under future (2051) do-nothing conditions, the existing infrastructure can accommodate the projected traffic volumes and no geometric improvements would be required.

Based on historical collision data from 2016 to 2020, a total of 131 collisions have been reported over the five-year period within the study area corridor. Of the 131 total collisions recorded, 82 occurred at intersections and the remaining 49 occurred within midblocks. Turning movement collisions were the predominant collision type at intersections within the study area with a total of 23 or 28% recorded over the five years of historical data. Rear end collisions were the next most common with 18 or 22% recorded. The intersection of Wyndham Street with Woolwich Street contained the most collisions with 32 or 39% of the total collisions recorded here.

2.4.3 Active Transportation Facilities

2.4.3.1 Pedestrian Facilities

Pedestrian facilities within the corridor include sidewalk on both sides of the street along the entire corridor in the study area from Woolwich Street to Carden Street. Pedestrian crossings are located at each intersection along the corridor, with additional signalized mid-block pedestrian crossings located at 112 Wyndham Street, and 146 Wyndham Street North.

The City's Transportation Master Plan Update designates Wyndham Street within the study area as a part of the enhanced pedestrian realm (i.e., wide sidewalks and high-quality walking environment).

2.4.3.2 Cyclist Facilities

There are no designated bicycle facilities within the study. Wyndham Street is currently designated as an "on-road" cycling facility; however, the City's Transportation Master Plan Update designates Wyndham Street within the study area as a part of the core Spine Cycling network, requiring designated cyclist facilities.

2.4.4 Transit

Seven different Guelph Transit Routes service Wyndham Street with within the study area corridor. The City's Transportation Master Plan Update identifies Wyndham Street within the study area as part of the City's Quality Transit Network, recommended for lane conversion, requiring the conversion of general traffic lanes to dedicated transit lanes (either at different times of day or all-day).

Guelph Central Station is located south of the study area at Carden Street and Wyndham Street. The Station serves Guelph Transit, GO transit (bus and rail), Via Rail and Flixbus services.

2.5 Topographic Survey

A topographic survey was completed for the study area including 50 metres to the east and 50 metres to the west of each of the intersections within the study area. The topographic survey will be provided to the City in AutoCAD Civil 3D

Base plans showing plan and profile of the road corridor will be prepared from the topographic survey to sufficiently illustrate the configuration and location of the adjoining boundary limits as required to evaluate alternative solutions and design concepts throughout the EA.

3.0 PHASE 2 CLASS EA – ALTERNATIVE SOLUTIONS

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity statement will be identified and evaluated, including the "Do Nothing" alternative, in consideration of the existing conditions with the study area as described in this Technical Memorandum.

APPENDIX 1

NATURAL ENVIRONMENT EXISTING CONDITIONS MEMO

Wyndham Street Municipal Class EA

Natural Environment Existing Conditions Memo

Prepared for: City of Guelph

Prepared by:

Natasha Welch, B.Sc. – Aquatic Ecologist

Reviewed by:

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RVA 215632

November 30, 2021

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1.0 PROJECT OVERVIEW

R.V. Anderson Associates Limited (RVA) was retained by the City of Guelph (City) to undertake Municipal Class Environmental Assessments (MCEA) in support of the Downtown Infrastructure Revitalization Program. The Downtown Infrastructure Revitalization Program serves as the overall capital program for the reconstruction and improvement of public infrastructure within the road allowances in Downtown Guelph. The Infrastructure Revitalization Program will address aging municipal infrastructure throughout the Downtown Core. The planning phase of the Downtown Infrastructure Revitalization Program includes a Capital Implementation Plan and two MCEA assignments. In support of this work, an Environmental Impact Study (EIS) will be completed for each of the MCEA assignments (**Table 1.1**). A Natural Environment Assessment will be completed as a component of the EIS. This memorandum documents the preliminary existing conditions of the Natural Environment Assessment completed for Assignment 1 – Wyndham Street MCEA (the Project).

Table 1.1 – Downtown Infrastructure Revitalization Program MCEA Assignments

No.	Assignment	Class EA Schedule	From	To
1	Wyndham Street	B	Carden Street	Woolwich Street
2	Macdonell and Allan Structures	C	Woolwich/Wellington intersection	Arthur/Rose intersection

Notes: Project shown in grey scale is documented under a separate cover.

As part of the Natural Environment Assessment, a desktop review of the existing natural environment was completed. The following memorandum summarizes the results of the desktop review and identifies data gaps to be addressed by the 2022 field program required to appropriately identify and mitigate potential impacts associated with the alternative solutions in Phase 2 of the MCEA.

1.1 Study Area

The Project is located in the City of Guelph, Ontario, within the City's Downtown Core. The Study Area extends approximately 500 m along Wyndham Street from the Carden Street to Woolwich Street intersections and includes the intersections, as well as the municipal road allowance (Scoped Study Area). Lands within 120 m of the Scoped Study Area were also reviewed as part of this assignment (General Study Area), as illustrated in **Figure 1.1**.

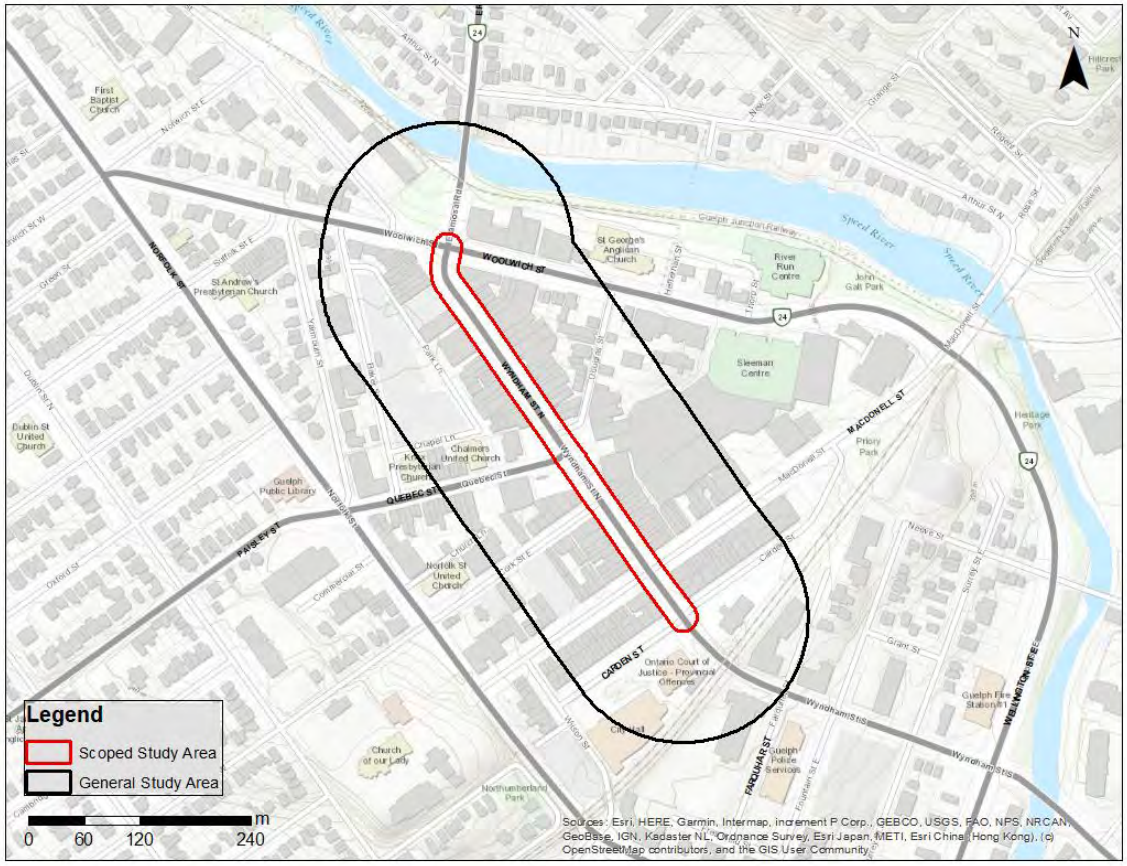

Figure 1.1 – Wyndham Street Study Area

1.2 Alternative Solutions

Under Phase 2 of the MCEA process, all reasonable solutions to address the problem and opportunity statement will be identified and evaluated, including the "Do Nothing" alternative, as well as lane reduction from four to two lanes, and the implementation of a traffic circle in St. George's Square. While the alternative solutions for the Wyndham Street corridor are still being developed, road safety, operations, and connectivity, as well as improvements to St. Georges Square at the Wyndham/Quebec/Douglas intersection, will be considered.

2.0 PLANNING CONTEXT

As per the City's Official Plan, the General Study Area is situated within the Approved Secondary Plans area (Schedule 2: Land Use Plan) and is designated as an Urban Growth Centre (Schedule 1: Growth Plan Elements). At the northern extend of the General Study Area, the Speed River is associated with a City Natural Heritage System (Schedule 4) that falls within the Grand River Conservation Authority (GRCA) regulation

limit (O. Reg. 150/06). The following plans, policies, and legislations will be considered as part of the Natural Environment assessment:

- Provincial Policy Statement (2020);
- City of Guelph Official Plan (consolidated 2021);
- Guidelines for the Preparation of Environmental Impact Studies, Version 2 (City of Guelph 2020);
- Natural Heritage Reference Manual, 2nd edition (OMNR 2010);
- Significant Wildlife Habitat Technical Guide (OMNR 2000);
- Significant Wildlife Habitat Criteria Schedules for Ecoregion Criteria 6E (MNRF 2015);
- Ontario Regulation 150/06 (Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation);
- *Endangered Species Act* (ESA), 2007;
- *Fisheries Act*; and,
- *Species at Risk Act* (SARA).

3.0 BACKGROUND REVIEW

3.1 Information Sources

Existing background information concerning the natural environment within and surrounding the Study Area, including Species at Risk (SAR), was compiled from the following sources:

- Fisheries and Oceans Canada (DFO) online aquatic Species at Risk mapping tool (2021);
- Natural Heritage Information Center (NHIC) database accessed via MNRF's Make-a-Map: Natural Heritage Areas application;
- Ontario GeoHub Open Data Resource powered by Land Information Ontario (LIO) Aquatic Resources Data and Wildlife Values Area and provided by the Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF);
- Fish ON-Line Mapping application provided by the MNRF;

- Ontario Breeding Bird Atlas (OBBA) Archives (Birds Canada);
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature);
- Ontario Butterfly Atlas (Toronto Entomological Society);
- Ontario Moth Atlas (Toronto Entomological Society);
- iNaturalist web application;
- eBird Database – Guelph – River Mill Condos Hot Spot (Cornell Lab of Ornithology); and,
- Aerial imagery.

3.2 Agency Consultation

Information requests pertaining to natural heritage resources within the vicinity of the Study Area were submitted to the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) Guelph District (formerly the Ministry of Natural Resources and Forestry (MNRF)), the Ministry of Environment, Conservation and Parks (MECP) Species at Risk Branch, and the Grand River Conservation Authority (GRCA) on April 5, 2021. GRCA and MECP provided responses on April 6, 2021, and April 23, 2021, respectively; however, a response from NDMNRF was still pending at the time of report preparation. A follow-up request was submitted to NDMNRF on November 25th, 2021. Agency correspondence containing non-sensitive information can be found in **Appendix A**.

4.0 CHARACTERIZING THE NATURAL ENVIRONMENT: METHODOLOGY AND DATA COLLECTION

In advance of field investigations, a preliminary review of available background data was completed. Information compiled during the preliminary review was analyzed to identify data gaps within the General Study Area. These data gaps were then used to develop a robust field program necessary to characterize and evaluate the natural environment, including the ecological function of natural heritage features within the Scoped Study Area, to assess potential impacts associated with the proposed project. Scientific Names, and Subnational[1] and Global[2] Ranks, as identified by NHIC, were also reviewed,

[1] Subnational Rank (S-Rank) – Conservation status of a species or plant community within a particular province, territory, or state (NatureServe, 2021).
[2] Global Rank (G-Rank) – Conservation status of a species or plant community across its entire range (NatureServe, 2021).

and included for Species of Conservation Concern (SCC)[3] and Species at Risk (SAR)[4]; as well as all fish species, identified during this desktop review. The results of this desktop review are summarized below.

4.1 Physical Environment

Geotechnical and hydrological investigations will be completed for the Scoped Study Area. The findings of these investigations will be presented under separate covers, and a summary will be included in the final EIS document.

4.2 Designated Natural Areas

The background review identified a Natural Heritage System within the study limits associated with the Speed River where it bisects the General Study Area, northeast of the Wyndham Street corridor. This Natural Heritage System is designated as a Significant Natural Area as per Schedule 4: Natural Heritage System of the City's Official Plan and includes Significant Valleylands (Schedule 4D) and Significant Wildlife Habitat (Schedule 4E). No additional Designated Natural Areas were noted by agencies or located during the background review.

4.3 Aquatic and Fish Habitat

4.3.1 Fish Habitat

Within the vicinity of the Wyndham Street corridor, the Speed River flows southeast through the northern extent of the General Study Area. While the Speed River is mapped as a coldwater system by the ARA polygon layer, Schedule 4B: Natural Heritage System (Surface Water and Fish Habitat) of the City's Official Plan identifies this watercourse as cool water fish habitat. This cool water classification was confirmed

[3] Species of Conservation Concern (SCC) – Species with provincial (S-Rank) and/or global (G-Rank) conservation status ranks of S1/G1, S2/G2, or S3/G3, and/or are listed under Schedule 1 of SARA as Endangered (END), Threatened (THR), or Special Concern (SC).
[4] Species at Risk (SAR) – Species identified as Extirpated (EXP), Endangered, Threatened, or Special Concern.

Subnational and Global Ranks Definitions
**S*/G* – Range of uncertainty about the status of the species*
S1/G1 – Critically Imperiled: At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.
S2/G2 – Imperiled: At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.
S3/G3 – Vulnerable: At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors
S4/G4 – Apparently Secure: At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
S5/G5 – Secure: At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.

through personal communications with Anthony E. Zammit's from the GRCA who also noted the Speed River has coldwater restoration potential (see **Appendix A**).

4.3.2 Fish Community

While a response from NDMNRF has not yet been received, fish records were identified during the background review and through correspondence with the GRCA. GRCA also noted NDMNRF may have additional fish data relevant to the Study Area. Fish species identified for the Speed River, within the vicinity of the Study Area, are summarized in **Table 4.1**, below. Review of the NHIC database and DFO aquatic SAR mapping did not indicate the presence of aquatic SAR within the vicinity of the Study Area, nor were any aquatic SAR identified through consultation with MECP.

Table 4.1 – Fish Records for the Speed River within the vicinity of the Study Area

Common Name	Scientific Name	ESA/ SARA	S-Rank / G-Rank	Source	Thermal Regime*	Last Observed (Year)
Blackside Darter	*Percina maculata*	- / -	S4/G5	ARA	Cool	2014
Bluntnose Minnow	*Pimephales notatus*	NAR/ -	S5/G5	GRCA	Warm	1970
Brook Stickleback	*Culaea inconstans*	- / -	S5/G5	GRCA	Cool	1970
Brown Bullhead	*Ameiurus nebulosus*	- / -	S5/G5	Fish ON-Line	Warm	N/A
Common Carp	*Cyprinus carpio*	- / -	SNA/G5	Fish ON-Line	Warm	N/A
Common Shiner	*Luxilus cornutus*	- / -	S5/G5	GRCA	Cool	1970
Creek Chub	*Semotilus atromaculatus*	- / -	S5/G5	GRCA	Cool	1970
Eastern Blacknose Dace	*Rhinichthys atratulus*	- / -	S5/G5	GRCA	Cool	1970
Greenside Darter	*Etheostoma blennioides*	NAR/ -	S4/G5	GRCA	Warm	2009
Johnny Darter	*Etheostoma nigrum*	- / -	S5/G5	GRCA	Cool	1970
Largemouth Bass	*Micropterus salmoides*	- / -	S5/G5	ARA	Warm	2012
Longnose Dace	*Rhinichthys cataractae*	- / -	S5/G5	GRCA	Cool	1970
Mottled Sculpin	*Cottus bairdii*	- / -	S5/G5	GRCA	Cool	2009
Northern Pike	*Esox lucius*	- / -	S5/G5	Fish ON-Line	Cool	N/A
Pumpkinseed	*Lepomis gibbosus*	- / -	S5/G5	Fish ON-Line	Warm	N/A
Rainbow Darter	*Etheostoma caeruleum*	- / -	S4/G5	GRCA	Cool	2009

Common Name	Scientific Name	ESA/ SARA	S-Rank / G-Rank	Source	Thermal Regime*	Last Observed (Year)
Rock Bass	*Ambloplites rupestris*	- / -	S5/G5	ARA; Fish ON-Line; GRCA	Cool	2012
Smallmouth Bass	*Micropterus dolomieu*	- / -	S5/G5	ARA; Fish ON-Line; GRCA	Cool	2014
White Sucker	*Catostomus commersonii*	- / -	S5/G5	Fish ON-Line; GRCA	Cool	2014
Yellow Perch	*Perca flavescens*	- / -	S5/G5	ARA; Fish ON-Line; GRCA	Cool	2014

*Notes: Rows shown in greyscale are historical records (>25 years old); * Eakins 2021*

Based on the above table, the Speed River is comprised of secure cool to warm water forage, bait, sport, and pan fish species, except for Blackside Darter (uncommon), Greenside Darter (uncommon) and Rainbow Darter (intolerant), which are provincially ranked (S-Rank) as apparently secure. In addition to these three darter species, a historical record from 1970 for Eastern Blacknose Dace was identified by the GRCA; however, this fish record predates the recent division of Blacknose Dace into two separate species. Furthermore, Ontario populations of Eastern and Western Blacknose Dace are difficult to distinguish and are often treated as a single species, therefore, this assessment will not differentiate between the eastern and western populations (Holm *et al*. 2010).

While the age of the records compiled during the background review are either unknown, or more than five years old, the Speed River has been extensively fished over the years. As such, pending NDMNRF's response to the information request, a fish inventory will not be undertaken unless requested by the agencies.

4.3.3 Implications for Field Program

Due to the Wyndham Street Scoped Study Area, and therefore the potential area of impact, being approximately 70 m or more from the Speed River, impacts to the watercourse are not anticipated as a result of this assignment provided general mitigation measures are implemented, which will be outlined in the final EIS report. Given the setback from the watercourse, and the absence of aquatic SAR, an aquatic habitat assessment and fish inventory will not be undertaken for the Speed River as part of this assignment.

4.4 Vegetation and Vegetation Communities

4.4.1 Vegetation Communities

RVA will undertake a terrestrial field investigation in the early summer of 2022 to carry out Ecological Land Classification (ELC) for vegetation communities within the Scoped Study Area and a botanical inventory listing vascular plant species will be completed for each vegetation type or ecosite. Vegetation communities will be classified as per the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee *et al.* 1998).

4.4.2 Botanical Inventory

The background review did not identify any significant plant species within the vicinity of the Study Area. To classify vegetation communities (see **Section 4.4.1**), a single-season floral inventory will be undertaken for the Scoped Study Area in 2022. The field visit will be timed to correspond with the early summer inventory window (June - August), which is the peak season for flora, to identify as many plant species as possible. A vascular plant list will be included as an appendix of the final EIS report, prepared in accordance with the City's EIS Guidelines (City of Guelph 2020). Should rare or significant species be observed, their location(s) will be recorded.

4.4.3 Tree Inventory and Preservation Plan

Aerial imagery indicates a number of trees are present within the vicinity of the Scoped Study Area. In support of this assignment, a detailed tree inventory and preservation plan will be completed. Amy Choi Consulting will conduct a tree inventory to assess all trees greater than 10 cm dbh (diameter at breast height) with driplines within 6 m of the Scoped Study Area. Information pertaining to tree species, dbh, dripline, and tree health and condition will be recorded. As part of the tree inventory, the Scoped Study Area will be screened for Butternut (*Juglans cinerea*) a provincially endangered tree, and Kentucky Coffeetree (*Gymnocladus dioicus*) a provincially threatened tree species. If Butternut is identified during field surveys, a Butternut Health Assessment may be required. The tree inventory and preservation plan will be presented as a separate report and included as an appendix to the EIS.

4.5 Wildlife and Wildlife Habitat

4.5.1 Wildlife

Wildlife species were identified during the background review and have been discussed below. While no targeted field surveys are planned for wildlife, incidental observations of

wildlife, including call and signs, will be recorded during each site visit. If rare or significant wildlife species are observed, their location(s) will be recorded.

Breeding Birds

A total of 12 bird SAR and SCC were identified during the background review. **Table 4.2** provides the list of these significant species and indicates the conservation statuses and year of the most recent record in the area, if known.

Table 4.2 – Breeding Bird SAR and SCC Records

Common Name	Scientific Name	ESA/ SARA	S-Rank/ G-Rank	Source	Last Observed (Year)
Bank Swallow	*Riparia riparia*	THR/THR	S4B/G5	OBBA	N/A
Barn Swallow	*Hirundo rustica*	THR/THR	S4B/G5	OBBA; eBird	2020
Bobolink	*Dolichonyx oryzivorus*	THR/THR	S4B/G5	OBBA	N/A
Chimney Swift	*Chaetura pelagica*	THR/THR	S3B/G4G5	NHIC; OBBA; eBird	2021
Eastern Meadowlark	*Sturnella magna*	THR/THR	S4B, S3N/G5	NHIC; OBBA	N/A
Eastern Wood-Pewee	*Contopus virens*	SC/SC	S4B/G5	OBBA; iNaturalist	2020
Grasshopper Sparrow	*Ammodramus savannarum*	SC/ -	S4B/G5	OBBA	N/A
Least Bittern	*Ixobrychus exilis*	THR/THR	S4B/G4G5	OBBA	N/A
Peregrine Falcon	*Falco peregrinus*	SC/ -	S4/G4	iNaturalist; eBird	2021
Red-headed Woodpecker	*Melanerpes erythrocephalus*	SC/THR	S3/G5	OBBA	N/A
Rough-legged Hawk	*Buteo lagopus*	NAR /-	S1B,S4N/G5	eBird	2020
Wood Thrush	*Hylocichla mustelina*	SC/THR	S4B/G4	NHIC; OBBA	N/A

Herpetofauna

A total of six herpetofaunal SAR and SCC were identified during the background review. **Table 4.3** provides the list of these significant species and indicates the conservation statuses and year of the most recent record in the area, if known.

Table 4.3 – Herpetofaunal SAR and SCC Records

Common Name	Scientific Name	ESA/ SARA	S-Rank/ G-Rank	Source	Last Observed (Year)
Blanding's Turtle	*Emydoidea blandingii*	THR/END	S3/G4	ORAA	2016
Eastern Milksnake	*Lampropeltis triangulum*	NAR/SC	S4/G5	ORAA; iNaturalist;	2021
Eastern Ribbonsnake	*Thamnophis sauritus*	SC/ -	S4/G5	ORAA	1985
Midland Painted Turtle	*Chrysemys picta marginata*	- / - (COSEWIC – SC)	S4/G5T5	NHIC; ORAA; iNaturalist	2020
Northern Map Turtle	*Graptemys geographica*	SC/SC	S3/G5	ORAA	1925
Snapping Turtle	*Chelydra serpentina*	SC/SC	S4/G5	NHIC; ORAA; iNaturalist	2020

Mammals

While eleven mammal species were identified during the background review, no SAR or SCC were identified.

Insects

A total of 13 insect SAR and SCC were identified during the background review. **Table 4.4** provides the list of these significant species and indicates the conservation statuses and year of the most recent record in the area, if known.

Table 4.4 – Insect SAR and SCC Records

Common Name	Scientific Name	ESA/ SARA	S-Rank/ G-Rank	Source	Last Observed (Year)
Black-and-yellow Lichen Moth	*Lycomorpha pholus*	- / -	S3S4/G5	iNaturalist	2021
Giant Leopard Moth	*Hypercompe scribonia*	- / -	S3S4/G5	OMA	2019
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	END/END	S1S2/G3G5	NHIC	N/A
Little Underwing	*Catocala minuta*	- / -	S3/G5	OMA	2006
Monarch	*Danaus plexippus*	SC/SC	S2N,S4B/G4	iNaturalist;OBA	2021
Pawpaw Sphinx	*Dolba hyloeus*	- / -	S3S4/G5	OMA	2006
Penitent Underwing	*Catocala piatrix*	- / -	S3/G5	OMA	2019
Phyllira Tiger Moth	*Grammia phyllira*	- / -	S3/G4	OMA	N/A

Common Name	Scientific Name	ESA/ SARA	S-Rank/ G-Rank	Source	Last Observed (Year)
Pink-legged Tiger Moth	*Spilosoma latipennis*	- / -	S3S4/G4	OMA	2006
Tawny Emperor	*Asterocampa clyton*	- / -	S3/G5	OBA	2019
The Betrothed	*Catocala innubens*	- / -	S3/G5	OMA	2002
West Virginia White	*Pieris virginiensis*	SC/-	S3/G2G3	OBA	1993
Yellow-banded Bumble Bee	*Bombus terricola*	SC/SC	S3S5/G3G4	iNaturalist	2021

4.5.2 Significant Wildlife Habitat

A preliminary screening of Significant Wildlife Habitat (SWH) was completed for the Study Area based on the collection of background data to identify gaps and develop the field program (**Table 4.5**). Field surveys will be undertaken in 2022 to address data gaps.

Table 4.5 – Significant Wildlife Habitat (SWH) Screening Table

Significant Wildlife Habitat Type	Known or Candidate SWH Present Within or Adjacent to the Subject Property?	Rationale (Habitat Presence or Absence)	Field Studies Required?
Seasonal Concentration Areas			
Deer Yarding Areas (as identified by NDMNRF)	To be confirmed with NDMNRF	Unknown	Unlikely
Deer winter congregation areas (as identified by NDMNRF)	To be confirmed with NDMNRF	Unknown	Unlikely
Colonial bird nesting habitat: Tree/shrub, Cliff/bank, Ground	No	Potential for exposed soil banks along Speed River.	No - Potential habitat outside of Scoped Study Area.
Waterfowl stopover and staging areas: Aquatic, Terrestrial	No	No suitable wetland communities or fields prone to spring flooding or spring sheet flow within Study Area.	No
Waterfowl over wintering Areas (as identified by NDMNRF)	Yes – SWH Mapped by NHIC (To be confirmed with NDMNRF)	Unknown	No - SWH outside of Scoped Study Area.
Raptor wintering (feeding and roosting) areas	No	No suitable roosting, foraging and resting habitat within Study Area.	No
Turtle wintering areas	No	Potential suitable habitat within Speed River.	No - Potential habitat outside of Scoped Study Area.
Reptile (snake) hibernacula	No	Potential suitable habitat within Study Area	Yes - Habitat Assessment

Significant Wildlife Habitat Type	Known or Candidate SWH Present Within or Adjacent to the Subject Property?	Rationale (Habitat Presence or Absence)	Field Studies Required?
Bat hibernacula	No	No suitable habitat within Study Area.	No
Bat maternity colonies	No	No suitable habitat (woodlands) within Study Area.	No
Rare Vegetation Communities			
Alvar	No	Habitat not within study area.	No
Prairie	No	Habitat not within study area.	No
Savannah	No	Habitat not within study area.	No
Rare forest types	No	Habitat not within study area.	No
Cliff/ talus	No	Habitat not within study area.	No
Rock barrens	No	Habitat not within study area.	No
Sand barrens	No	Habitat not within study area.	No
Other rare vegetation types, including old growth forest	No	Habitat not within study area.	No
Specialized Habitats for Wildlife			
Bald Eagle and Osprey nesting, foraging and perching habitat	No	No forest communities found along Speed River shoreline within Study Area	No
Woodland raptor nesting habitat	No	No forest communities found within Study Area.	No
Amphibian breeding habitat: Woodland, Wetland (includes bullfrog concentration areas)	No	No suitable woodland or wetland habitat within Study Area.	No
Turtle nesting habitat	No	Potential suitable habitat within Speed River.	No - Potential habitat outside of Scoped Study Area.
Woodland/specialized raptor nesting	No	Habitat not within Study Area.	No
Bald eagle wintering areas	No	Habitat not within Study Area.	No
Seeps and springs	No	Forested area within watercourse headwaters not within Study Area.	No
Wildlife Movement Corridors			
Animal movement corridors; Deer movement corridors; Amphibian movement corridors; and,	To be confirmed with NDMNRF	Unknown	Unlikely

Significant Wildlife Habitat Type	Known or Candidate SWH Present Within or Adjacent to the Subject Property?	Rationale (Habitat Presence or Absence)	Field Studies Required?
other wildlife movement corridors			
Ecological linkages	No	No ecological linkages identified as part of the City's Natural Heritage System, per Schedule 4 of the Official Plan, within Study Area.	No
Habitats for Species of Conservation Concern			
Marsh bird breeding habitat	No	Habitat not present	No
Woodland area-sensitive breeding habitat	No	Habitat not present	No
Open country bird breeding habitat	No	Habitat not present	No
Shrub / early successional breeding bird habitat	No	Habitat not present	No
Terrestrial crayfish habitat	No	Habitat not present	No
Global species of conservation concern (i.e., G1, G2 and G3) as identified by the NHIC	Potential	Global species of conservation concern identified by background review.	Yes - Habitat Assessment
Federal species of conservation concern (i.e., listed as endangered, threatened or special concern federally)	Potential	Federal species of conservation concern identified by background review and have the potential to occur within the Study Area.	Yes - Habitat Assessment
Provincial species of conservation concern (i.e., listed as special concern provincially or S1, S2 or S3 by the NHIC)	Potential	Provincial species of conservation concern identified by background review and have the potential to occur within the Study Area.	Yes - Habitat Assessment

Notes: Modified Appendix D: Significant Wildlife Habitat Screening Table from "Guidelines for the Preparation of Environmental Impact Studies" (City of Guelph 2020).

4.6 Species at Risk Screening

As shown in the above subsections, a variety of significant floral and faunal species have been recorded in the vicinity of the General Study Area by various sources, including citizen scientists/projects, provincial databases, and regulatory agencies. Of the SCC and SAR noted above, only SAR classified as Extirpated, Endangered or Threatened that meet the below criteria are afforded protection within the Study Area, which includes:

- Extirpated, Endangered or Threatened species included on the SARO List under O. Reg. 230/08 of the Endangered Species Act, 2007.

- Federally listed aquatic species and migratory birds included on Schedule 1 of the Species at Risk Act (SARA) as Endangered or Threatened. On private or provincially owned lands all other federally listed Endangered, Threatened or Extirpated species are not protected, unless ordered by the Governor in Council.

All SAR identified during the background review which meet the above criteria, and therefore are protected under the ESA or SARA, were screened for habitat potential and potential to occur within the Study Area. The results of the SAR screening are presented in **Table 4.6**, which will be further refined in the final EIS report following field investigations.

Table 4.6 – Species at Risk Assessment

Species Name and Status (Ontario | Canada)	Species Records in the Study Area and Habitat Preference	Probability Assessment
Birds		
Bank Swallow (*Riparia riparia*) Threatened | Threatened	Bank Swallow were recorded in the vicinity of the Study Area as part of targeted citizen science surveys. Nests are excavated in vertical faces of clay, sand, or gravel, including riverbanks, gravel pits and material stockpiles.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Barn Swallow (*Hirundo rustica*) Threatened | Threatened	Recorded in the vicinity of the Study Area as part of targeted citizen science surveys. Barn Swallow are still relatively common and build their cup-shaped mud nests almost exclusively on human-made structures like open barns, under bridges, and in culverts.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Bobolink (*Dolichonyx oryzivorus*) Threatened | Threatened	Recorded in the vicinity of the Study Area as part of targeted citizen science surveys. Historically Bobolink were found in tallgrass prairie and other open meadows; however, the species now breeds in hayfields.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Chimney Swift (*Chaetura pelagica*) Threatened | Threatened	Recorded in the vicinity of the Study Area by NHIC and as part of targeted citizen science surveys. Chimney Swifts nested in caves and hollow trees prior to European settlement and are today most often associated with chimneys and other manmade structures.	**Potential** – Suitable nesting habitat for this species may be present within the Scoped Study Area.
Eastern Meadowlark (*Sturnella magna*) Threatened | Threatened	Recorded in the vicinity of the Study Area by NHIC and as part of targeted citizen science surveys. Eastern Meadowlark breeds primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in other open areas.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Least Bittern (*Ixobrychus exilis*) Threatened | Threatened	Recorded in the vicinity of the Study Area as part of targeted citizen science surveys. Least Bittern are known to inhabit wetlands including deep marshes, swamps, as well as the marshy borders of lakes, ponds, and streams, and nest in cattails.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.

Species Name and Status (Ontario | Canada)	Species Records in the Study Area and Habitat Preference	Probability Assessment
Red-headed Woodpecker (*Melanerpes erythrocephalus*) Special Concern | Threatened	Recorded in the vicinity of the Study Area as part of targeted citizen science surveys. Red-headed Woodpecker are cavity nesters known to inhabit open woodlands and woodland edges, as well as fields with large trees scattered through out, including parklands and suburban areas, and prefer dead trees for nesting and perching.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Wood Thrush (*Hylocichla mustelina*) Special Concern | Threatened	Recorded in the vicinity of the Study Area by NHIC and as part of targeted citizen science surveys. Wood Thrush live in moist, mature deciduous and mixed forests with well-developed undergrowth and tall trees for singing perches. They prefer larger forests but will also use smaller woodlots.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Reptiles		
Blanding's Turtle (*Emydoidea blandingii*) Threatened | Endangered	This species was recorded in the vicinity of the Study Area by citizen scientists. Blanding's Turtles live in shallow water, typically associated with wetlands, ponds and lakes, often with abundant aquatic vegetation. These turtles also utilize terrestrial habitats for movement, foraging and nesting.	**Unlikely** – Suitable nesting habitat not identified within the Scoped Study Area by desktop review.
Insects		
Gypsy Cuckoo Bumble Bee (*Bombus bohemicus*) Endangered | Endangered	The NHIC database has a record of this species in the vicinity of the Study Area. Gypsy Cuckoo Bumble Bee inhabit open meadows, agricultural, and urban habitats, as well as boreal forest and woodlands.	**Potential** – Suitable habitat may be present within the Scoped Study Area.

4.7 Field Program

Based on the gaps identified during the background review, the proposed field investigations to complement the existing inventory of the natural environment and characterize the natural heritage features within the Scoped Study Area are summarized in **Table 4.7**.

Table 4.7 – Field Investigations Schedule

Survey Type	Schedule	Level of Effort	RVA Staff
Ecological Land Classification	June – August 2022	Single Season Site Visit	Paul Mikoda
Early Summer Floral Inventory	June – August 2022	Single Season Site Visit	Paul Mikoda
Tree Inventory	*TBC (Growing Season)*	*Single Site Visit*	*Amy Choi Consulting*
Significant Wildlife Habitat	June – August 2022	Single Season Site Visit	Paul Mikoda

Survey Type	Schedule	Level of Effort	RVA Staff
Incidental Wildlife	All Site Visits	All Site Visits	All Staff

5.0 DATA ANALYSIS: APPROACH AND METHODOLOGY

5.1 Evaluation of Significance

Following field investigations, background and field data will be compiled to evaluate the significance of natural heritage features and areas identified within the Study Area. This will include comparing the compiled data to thresholds set out in the Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E (OMNR 2015) and in accordance with the criteria outlined in the Significant Wildlife Habitat Technical Guide, as well as the City's Official Plan.

5.2 Ecological Constraints and Opportunities

Constraints and opportunities associated with the selected alternative will be evaluated as part of the final EIS Report.

5.3 Impact Assessment and Mitigation Requirements

Terrestrial habitats within the Scoped Study Area have the potential to be impacted by the proposed project through clearing and removals of vegetation, as well as grading activities associated with construction. Direct and indirect impacts to SWH and SAR will be reviewed, and appropriate mitigation measures will be identified in the EIS.

5.4 Environmental Policy Analysis

The proposed improvements have potential to impact the natural environment. If impacts can not be fully mitigated agency permitting and/or approvals may be required. Candidate features identified within the Study Area will be evaluated against the applicable federal, provincial, and municipal planning policies as part of the final EIS report.

6.0 RECOMMENDATIONS AND CONCLUSION

Recommendations will be incorporated into the conclusion of the final EIS report.

7.0 REFERENCES

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Appendix A

Agency Correspondence

Natasha Welch

From:	Natasha Welch
Sent:	November 25, 2021 11:38 AM
To:	'melinda.thompson@ontario.ca'; 'SCP.Guelph@ontario.ca'
Cc:	Paul Mikoda; Tisha Doucette; Courtney Beneteau; Andrew McGregor
Subject:	FW: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA
Attachments:	Study Areas Map - City of Guelph - Downtown Revitalization EA - 215632.pdf; Table 1 - City of Guelph - Downtown Revitalization EA - 215632.pdf

Good morning Melinda,

I am following up on the status of RVA's information request regarding the City of Guelph Downtown Revitalization Municipal Class EA project. We submitted our request last April but have not yet received a response. I have included our original request below, as well as a map of the study area and a list of sensitive species (attached) for your reference.

We also submitted data requests to MECP and GRCA. GRCA noted the Speed River is classified as a cool water system and mentioned you may have additional fish data, referencing a fish survey completed by NDMNRF Guelph District in 2003. I have included our fish list below, please let me know if you have additional records on file or if any of the historical records should be removed. Based on the below fish community, the assumed in-water timing window for construction for the Speed River is from July 16 to March 14 of the following year – please confirm this is correct.

Common Name	Scientific Name	Source	Last Observed (Year)
Blackside Darter	*Percina maculata*	ARA	2014
Bluntnose Minnow	*Pimephales notatus*	GRCA	1970
Brook Stickleback	*Culaea inconstans*	GRCA	1970
Brown Bullhead	*Ameiurus nebulosus*	Fish ON-Line	N/A
Common Carp	*Cyprinus carpio*	Fish ON-Line	N/A
Common Shiner	*Luxilus cornutus*	GRCA	1970
Creek Chub	*Semotilus atromaculatus*	GRCA	1970
Eastern Blacknose Dace	*Rhinichthys atratulus*	GRCA	1970
Greenside Darter	*Etheostoma blennioides*	GRCA	2009
Johnny Darter	*Etheostoma nigrum*	GRCA	1970
Largemouth Bass	*Micropterus salmoides*	ARA	2012
Longnose Dace	*Rhinichthys cataractae*	GRCA	1970
Mottled Sculpin	*Cottus bairdii*	GRCA	2009

Common Name	Scientific Name	Source	Last Observed (Year)
Northern Pike	*Esox lucius*	Fish ON-Line	N/A
Pumpkinseed	*Lepomis gibbosus*	Fish ON-Line	N/A
Rainbow Darter	*Etheostoma caeruleum*	GRCA	2009
Rock Bass	*Ambloplites rupestris*	ARA; Fish ON-Line; GRCA	2012
Smallmouth Bass	*Micropterus dolomieu*	ARA; Fish ON-Line; GRCA	2014
White Sucker	*Catostomus commersonii*	Fish ON-Line; GRCA	2014
Yellow Perch	*Perca flavescens*	ARA; Fish ON-Line; GRCA	2014

Note: Historical records have been shaded Grey

Thank you,

rva

Natasha Welch, B.Sc., CAN-CISEC
AQUATIC BIOLOGIST

t 289 348 1234 ext. 4504 | m 519 546 5234
a 4900 Palladium Way, Suite 200, Burlington, ON L7M 0W7

rvanderson.com

From: Paul Mikoda
Sent: April 5, 2021 6:18 PM
To: 'melinda.thompson@ontario.ca' <melinda.thompson@ontario.ca>
Cc: Andrew McGregor <AMcGregor@rvanderson.com>; Tisha Doucette <TDoucette@rvanderson.com>; Courtney Beneteau <CBeneteau@rvanderson.com>
Subject: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA

Hello Melinda,

R.V. Anderson Associates (RVA) has been retained by the City of Guelph to undertake a Municipal Class Environmental Assessment to evaluate traffic improvement options to improve movement through the Downtown Area. A map of the corresponding Study Areas is attached (Study Areas Map). The project falls within the jurisdiction of the Grand River Conservation Authority (GRCA) as well as the Ministry of the Environment, Conservation and Parks (MECP) Guelph District, and the Ministry of Natural Resources and Forestry (MNRF) Guelph District.

RVA has undertaken a desktop review of the following information sources as pertains to the Study Area, as per the Client's Guide to Preliminary Screening for SAR (MECP, May 2019) including:

- Natural Heritage Information Center database (accessed via MNRF's Make-a-Map: Natural Heritage Areas application (NAD83 Atlas 1km squares within the Study Area: 17NJ6022, 17NJ6122, 17NJ6021, 17NJ6121);
- Ontario Breeding Bird Atlas (OBBA) Archives (Atlas square: 17NJ62);
- Ontario Reptile and Amphibian Atlas (ORAA) (Atlas square: 17NJ62);
- Ontario Butterfly Atlas; Moth Atlas (Atlas square: 17NJ62);
- Aquatic resource area (ARA) data (segments, points and polygons) (Ontario GeoHub);
- Department of Fisheries and Oceans Aquatic Species at Risk Map;
- eBird – Guelph – River Mills Condos Hotspot (2010-present); and
- iNaturalist (filtered for Research Grade and Threatened records).

Details regarding the records of Species at Risk (SAR) and rare species noted in the vicinity of the Study Area, including their associated S-ranks and status under the Endangered Species Act, are shown in Table 1 (attached).

We note that the Speed River within the Study Area is a Significant Wildlife Habitat in the form of a Waterfowl Winter Concentration Area.

At this time, we would like to request any additional/supplemental natural heritage information that may be available in addition to those sources, as well as any concerns with the proposed project as related to natural heritage.

Please feel free to contact me if you have any questions or concerns with this request. A response to acknowledge your receipt of this email would be greatly appreciated.

Best regards,

Paul

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Paul Mikoda, B.Sc., CAN-CISEC
Terrestrial Ecologist

P: (519) 681-9916 ext. 5040
C: (905) 516-3132

R.V. Anderson Associates Limited
557 Southdale Road East, Suite 200, London, ON N6E 1A2

rvanderson.com

Natasha Welch

From: Species at Risk (MECP) <SAROntario@ontario.ca>
Sent: April 23, 2021 10:51 AM
To: Paul Mikoda
Subject: RE: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA

Categories: Filed by Newforma

Hi Paul,
I have reviewed your preliminary screening against our data and I do not have any additional species to add.
While this data represents MECP's best current available information, it is important to note that a lack of species information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

Please note it remains the clients responsibility to:

- Carry out preliminary screening for their project,
- Obtain the best available information for all applicable information sources,
- Conduct necessary field studies or inventories to identify and confirm the presence of absence of species at risk or their habitat,
- Consider any potential impacts to species at risk that a proposed activity might cause, and
- Comply with the Endangered Species Act (ESA).

Lisa

Lisa McShane
Management Biologist | Permissions and Compliance Section, Species at Risk Branch|Land and Water Division | Ministry of the Environment, Conservation and Parks | lisa.mcshane@ontario.ca | (226) 668-0527

From: Paul Mikoda <pmikoda@rvanderson.com>
Sent: Monday, April 5, 2021 6:17 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Andrew McGregor <AMcGregor@rvanderson.com>; Tisha Doucette <TDoucette@rvanderson.com>; Courtney Beneteau <cbeneteau@rvanderson.com>
Subject: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA

To whom it may concern,

R.V. Anderson Associates (RVA) has been retained by the City of Guelph to undertake a Municipal Class Environmental Assessment to evaluate traffic improvement options to improve movement through the Downtown Area. A map of the corresponding Study Areas is attached (Study Areas Map). The project falls within the jurisdiction of the Grand River Conservation Authority (GRCA) as well as the Ministry of the Environment, Conservation and Parks (MECP) Guelph District, and the Ministry of Natural Resources and Forestry (MNRF) Guelph District.

RVA has undertaken a desktop review of the following information sources as pertains to the Study Area, as per the Client's Guide to Preliminary Screening for SAR (MECP, May 2019) including:

- Natural Heritage Information Center database (accessed via MNRF's Make-a-Map: Natural Heritage Areas application (NAD83 Atlas 1km squares within the Study Area: 17NJ6022, 17NJ6122, 17NJ6021, 17NJ6121);
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- Ontario Butterfly Atlas; Moth Atlas (Atlas square: 17NJ62);
- Aquatic resource area (ARA) data (segments, points and polygons) (Ontario GeoHub);
- Department of Fisheries and Oceans Aquatic Species at Risk Map;
- eBird – Guelph – River Mills Condos Hotspot (2010-present); and
- iNaturalist (filtered for Research Grade and Threatened records).

Details regarding the records of Species at Risk (SAR) and rare species noted in the vicinity of the Study Area, including their associated S-ranks and status under the Endangered Species Act, are shown in Table 1 (attached).

At this time, we would like to request any additional/supplemental SAR information that may be available in addition to those sources, as well as any concerns with the proposed project as pertains to SAR and their habitats.

Please feel free to contact me if you have any questions or concerns with this request. A response to acknowledge your receipt of this email would be greatly appreciated.

Best regards,

Paul

rva

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Paul Mikoda, B.Sc., CAN-CISEC
Terrestrial Ecologist

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rvanderson.com

Natasha Welch

From:	Tony Zammit <tzammit@grandriver.ca>
Sent:	April 6, 2021 10:49 AM
To:	Paul Mikoda
Cc:	Andrew McGregor; Tisha Doucette; Courtney Beneteau; Ashley Rye
Subject:	RE: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA

Good Morning Paul,

Portions of the current study area are regulated by the GRCA owing to the presence of a watercourse (Speed River) and associated floodplain. In addition, the GRCA has mapped steep slopes, mostly along the south bank and within the vicinity of the Eramosa Road crossing, which appears to be situated outside your study area.

Regulated hazard feature mapping may be viewed and downloaded using the Grand River information Network.

The Speed River is classified as cool water fish habitat by the MNRF but also has cold water restoration potential. According to data obtained from the MNRF, the following fish species have been recorded along this section of the river:

- bluntnose minnow, brook stickleback, common shiner, creek chub, eastern blacknose dace, johnny darter, longnose dace, rock bass, smallmouth bass, white sucker (D.S. Osmond, 1970)
- greenside darter, mottled sculpin, rainbow darter, rock bass, smallmouth bass, yellow perch (Youth Outdoors Day Fish Collection, 2009)

It's my understanding that the MNRF completed a fish survey in 2003. Additional fish data may be obtained from the MNRF, Guelph District Office.

I'm copying Ashley Rye in our Planning department. Please direct all further correspondence to Ashley.

Thanks,
Tony

Anthony E. Zammit, MES|Watershed Ecologist
Grand River Conservation Authority
400 Clyde Road, Box 729, Cambridge, Ontario N1R 5W6
Tel: 519-621-2763 x2246 | Mobile: 519-240-0714
tzammit@grandriver.ca | www.grandriver.ca

From: Paul Mikoda <pmikoda@rvanderson.com>
Sent: Monday, April 5, 2021 6:18 PM
To: Tony Zammit <tzammit@grandriver.ca>
Cc: Andrew McGregor <AMcGregor@rvanderson.com>; Tisha Doucette <TDoucette@rvanderson.com>; Courtney Beneteau <cbeneteau@rvanderson.com>
Subject: 215632 - Natural Heritage Information Request - City of Guelph Downtown Revitalization Municipal Class EA

Hi Tony,

I hope this email finds you well. R.V. Anderson Associates (RVA) has been retained by the City of Guelph to undertake a Municipal Class Environmental Assessment to evaluate traffic improvement options to improve movement through the Downtown Area. A map of the corresponding Study Areas is attached (Study Areas Map). The project falls within the jurisdiction of the Grand River Conservation Authority (GRCA) as well as the Ministry of the Environment, Conservation and Parks (MECP) Guelph District, and the Ministry of Natural Resources and Forestry (MNRF) Guelph District.

RVA has undertaken a desktop review of the following information sources as pertains to the Study Area, as per the Client's Guide to Preliminary Screening for SAR (MECP, May 2019) including:

- Natural Heritage Information Center database (accessed via MNRF's Make-a-Map: Natural Heritage Areas application (NAD83 Atlas 1km squares within the Study Area: 17NJ6022, 17NJ6122, 17NJ6021, 17NJ6121);
- Ontario Breeding Bird Atlas (OBBA) Archives (Atlas square: 17NJ62);
- Ontario Reptile and Amphibian Atlas (ORAA) (Atlas square: 17NJ62);
- Ontario Butterfly Atlas; Moth Atlas (Atlas square: 17NJ62);
- Aquatic resource area (ARA) data (segments, points and polygons) (Ontario GeoHub);
- Department of Fisheries and Oceans Aquatic Species at Risk Map;
- eBird – Guelph – River Mills Condos Hotspot (2010-present); and
- iNaturalist (filtered for Research Grade and Threatened records).

Details regarding the records of Species at Risk (SAR) and rare species noted in the vicinity of the Study Area, including their associated S-ranks and status under the Endangered Species Act, are shown in Table 1 (attached).

The Speed River flows through the Study Area and it and it and its floodplain are regulated under Ontario Regulation 150/06.

At this time, we would like to request any additional/supplemental natural heritage information that may be available in addition to those sources, and also any concerns with the proposed project as relates to natural heritage or O. Reg 150/06.

I note that approximately a year ago we reached out to you on another file and were informed that due to the pandemic, staff are not available at this time to provide natural heritage information or data. Please let us know if that continues to be the case and we will refer to that email for additional information sources.

Please feel free to contact me if you have any questions or concerns with this request. A response to acknowledge your receipt of this email would be greatly appreciated.

Best regards,

Paul

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Paul Mikoda, B.Sc., CAN-CISEC
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557 Southdale Road East, Suite 200, London, ON N6E 1A2

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Study Areas Map

City of Guelph - Downtown Revitalization EA - RVA 215632

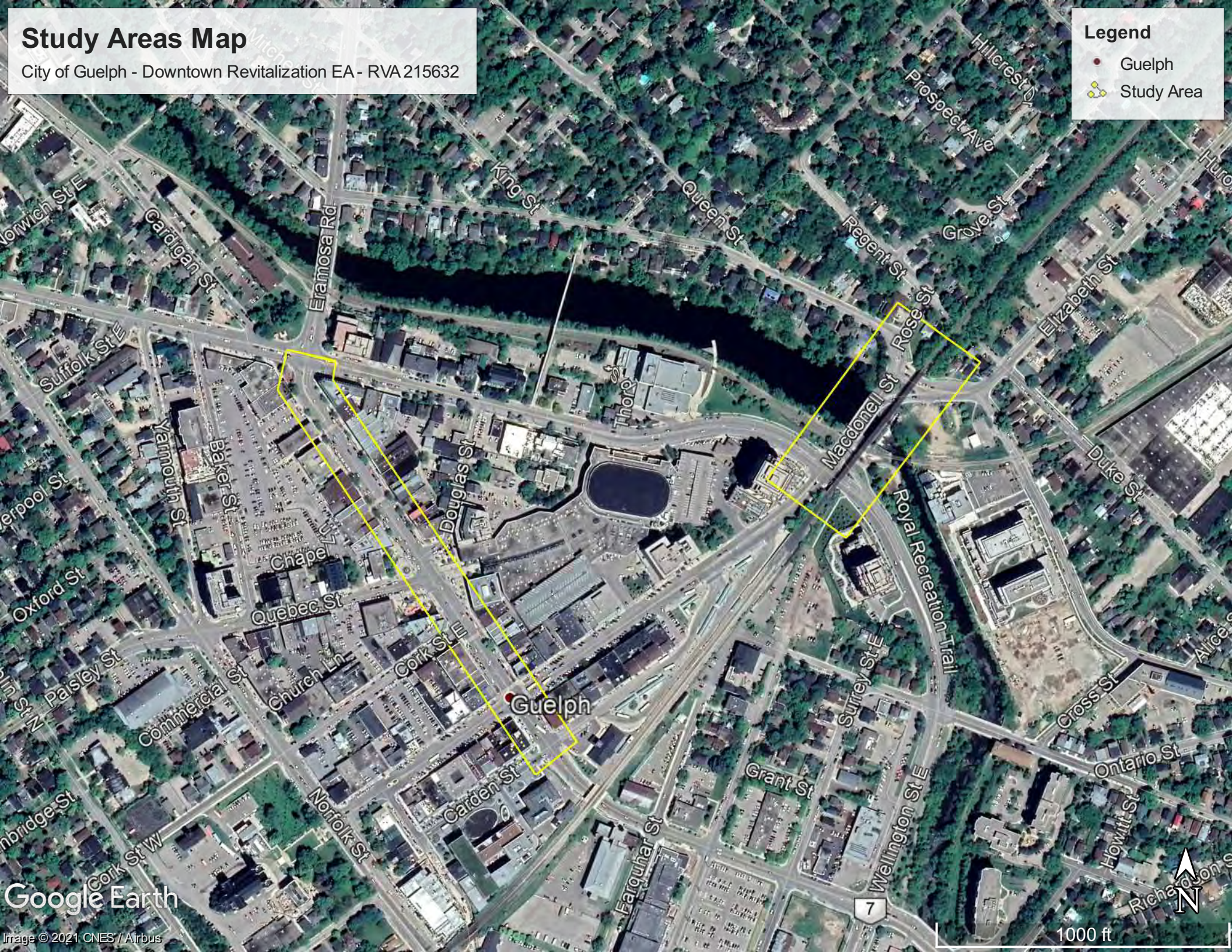

Table 1: Rare and At-Risk Species Potentially Present in the Vicinity of the Study Area

Common Name	Scientific Name	S-Rank	ESA Status	Source*	Last Observed (Year)
FLORA					
Eastern Redbud	*Cercis canadensis*	SX	-/-	INAT	2020
Butternut	*Juglans cinera*	S3?	END/END	INAT; NHIC	2019
Carey's Sedge	*Carex careyana*	S2	-/-	NHIC	N/A
FUNGI AND LICHENS					
-	-	-	-	-	-
BIRDS					
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S4B	SC/THR	OBBA	2005
Eastern Wood-pewee	*Contopus virens*	S4B	SC/SC	OBBA	2005
Wood Thrush	*Hylocichla mustelina*	S4B	SC/THR	OBBA; NHIC	2005
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	SC/SC	OBBA	2005
Least Bittern	*Ixobrychus exilis*	S4B	THR/THR	OBBA	2005
Chimney Swift	*Chaetura pelagica*	S4B,S4N	THR/THR	OBBA; NHIC	2005
Bank Swallow	*Riparia riparia*	S4B	THR/THR	OBBA	2005
Barn Swallow	*Hirundo rustica*	S5B	THR/THR	OBBA, eBird	2020
Bobolink	*Dolichonyx oryzivorus*	S4B	THR/THR	OBBA, NHIC	2005
Eastern Meadowlark	*Sturnella magna*	S4B	THR/THR	OBBA, NHIC	2005
Rough-legged Hawk	*Buteo lagopus*	S1B, S4N	-/-	eBird	2020
Peregrine Falcon	*Falco peregrinus*	S3B	SC/SC	INAT; eBird	2021
REPTILES AND AMPHIBIANS					
Snapping Turtle	*Chelydra serpentina*	S4	SC/SC	ORAA; NHIC	2019
Midland Painted Turtle	*Chrysemys picta marginata*		-/SC	ORAA; NHIC	2018
Blanding's Turtle	*Emydoidea blandingii*	S3	THR/SC	ORAA	2016
Northern Map Turtle	*Graptemys geographica*	S3	SC/SC	ORAA	1925
Eastern Milksnake	*Lampropeltis triangulum*	S4	-/SC	ORAA; NHIC	2018
Eastern Ribbonsnake	*Thamnophis sauritus*	S4	SC/SC	ORAA	1974
INVERTEBRATES (excludes mussels)					
Monarch	*Danaus plexippus*	S2N,S4B	SC	INAT; OBA	2020
Speckled Giant Lacewing	*Polystoechotes punctata*	SH	-/-	NHIC	N/A

Common Name	Scientific Name	S-Rank	ESA Status	Source*	Last Observed (Year)
Gypsy Cuckoo Bumble Bee	*Bombus bohemicus*	S1S2	END/-	NHIC	N/A
Rusty-patched Bumble Bee	*Bombus affinis*	S1	END/END	NHIC	N/A
American Bumble Bee	*Bombus pensylvanicus*	S3S4	-/-	NHIC	N/A
Yellow-banded Bumble Bee	*Bombus terricola*	S3S5	SC/-	INAT; NHIC	2018
West Virginia White	*Pieris virginiensis*	S3	-/SC	OBA	1993
Tawny Emperor	*Asterocampa clyton*	S3	-/-	OBA	2019
FISH AND MUSSELS					
-	-	-	-	-	-

*Source Abbreviations:
INAT – iNaturalist.ca (filtered for Research Grade and Threatened)
NHIC – Natural Heritage Information Center
ARA – Aquatic Resource Area (segments, points, polygons) (OntarioGeoHub)
ORAA – Ontario Reptile and Amphibian Atlas (Ontario Nature)
OBA – Ontario Butterfly Atlas (Toronto Entomological Society)
OMA – Ontario Moth Atlas (Toronto Entomological Society)
OBBA – Ontario Breeding Bird Atlas (Birds Canada)
DFO – Department of Fisheries and Oceans Species at Risk Mapping Application
eBird – Guelph-River Mill Condos Hotspot data

APPENDIX 2

CULTURAL HERITAGE REPORT: DESKTOP RESULTS

CULTURAL HERITAGE REPORT:
DESKTOP RESULTS

DOWNTOWN INFRASTRUCTURE REVITALIZATION PROGRAM
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

CITY OF GUELPH

DRAFT REPORT

Prepared for:

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ASI File: 21CH-007

June 2021

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CULTURAL HERITAGE REPORT:
DESKTOP RESULTS

DOWNTOWN INFRASTRUCTURE REVITALIZATION PROGRAM
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

CITY OF GUELPH

EXECUTIVE SUMMARY

ASI was contracted by R.V. Anderson Associates Ltd., on behalf of the City of Guelph, to conduct a Cultural Heritage Report as part of the Downtown Infrastructure Revitalization Program Municipal Class Environmental Assessment. The project involves road reconstruction and streetscape improvements. The project study area consists of the area designated as Downtown Guelph in the Downtown Secondary Plan, but is limited to that portion north of the Metrolinx railway tracks. It is generally bounded by the Speed River to the north, the Metrolinx railway tracks to the southeast, and residential development to the southwest.

The purpose of this report is to present a list of previously identified known and potential cultural heritage resources (CHRs) within the study area, based on the results of background research and desktop data collection. The results presented in this desktop report are preliminary. Once the preferred design is known, field work will be undertaken. Following field review, this report will be updated to describe the existing conditions of the study area and present an inventory of known and potential CHRs, which may include additional potential CHRs identified during field review. A preliminary impact assessment will assess potential impacts of the proposed undertaking and propose appropriate mitigation measures and recommendations for minimizing and avoiding negative impacts on identified CHRs. This draft submission includes the Desktop Results component of the assessment and will be updated to include the Existing Conditions and Preliminary Impact Assessment when preliminary designs are available for review.

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an urban land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are 253 known or potential CHRs within the Guelph Downtown Infrastructure Revitalization Program study area.

PROJECT PERSONNEL

Senior Project Manager:	Lindsay Graves, MA, CAHP Senior Cultural Heritage Specialist |Senior Project Manager - Cultural Heritage Division
Project Coordinator:	Katrina Thach, Hon. BA Associate Archaeologist | Project Coordinator - Environmental Assessment Division
Project Manager:	Laura Wickett, BA (Hon), Dip. Heritage Conservation Cultural Heritage Analyst | Project Manager - Cultural Heritage Division
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Graphics Production:	Peter Bikoulis Archaeologist | GIS Technician – Operations Division
Report Reviewer(s):	Annie Veilleux, MA, CAHP Senior Cultural Heritage Specialist | Manager - Cultural Heritage Division
	Kristina Martens, BA, Dipl. Heritage Conservation Cultural Heritage Specialist | Project Manager - Cultural Heritage Division

QUALIFIED PERSONS INVOLVED IN THE PROJECT

Lindsay Graves, MA, CAHP
Senior Cultural Heritage Specialist |Senior Project Manager - Cultural Heritage Division

The Senior Project Manager for this Cultural Heritage Report is Lindsay Graves (MA, Heritage Conservation), Senior Cultural Heritage Specialist and the Environmental Assessment Coordinator for the Cultural Heritage Division at ASI. She was responsible for: overall project scoping and approach; development and confirmation of technical findings and study recommendations; application of relevant standards, guidelines and regulations; and implementation of quality control procedures. Lindsay is academically trained in the fields of heritage conservation, cultural anthropology, archaeology, and collections management and has over 15 years of experience in the field of cultural heritage resource management. This work has focused on the assessment, evaluation, and protection of above ground cultural heritage resources. Lindsay has extensive experience undertaking archival research, heritage survey work, heritage evaluation and heritage impact assessment. She has also contributed to cultural heritage landscape studies and heritage conservation plans, led heritage commemoration and interpretive programs, and worked collaboratively with multidisciplinary teams to sensitively plan interventions at historic sites/places. In addition, she is a leader in the completion of heritage studies required to fulfill Class EA processes and has served as Project Manager for over 100 heritage assessments during her time at ASI. Lindsay is a member of the Canadian Association of Heritage Professionals.

Laura Wickett, BA (Hon.), Dipl. Heritage Conservation
Cultural Heritage Analyst | Project Manager - Cultural Heritage Division

The Project Manager for this Cultural Heritage Report is Laura Wickett (BA (Hon.), Diploma Heritage Conservation), who is a Cultural Heritage Analyst and Project Manager within the Cultural Heritage Division at ASI. She was responsible for day-to-day management activities, including scoping and conducting research activities and drafting of study findings and recommendations. Trained in the theoretical and technical aspects of heritage conservation, Laura has five years' experience working in the field of cultural heritage resource management. She began working in ASI's Cultural Heritage Division as a Cultural Heritage Technician in 2017, providing support for a range of cultural heritage assessment reports, including Cultural Heritage Resource Assessments, Cultural Heritage Evaluation Reports, Heritage Impact Assessments, and Secondary Plan assessments. She has also contributed to Heritage Conservation District studies, Cultural Heritage Landscape inventories and Heritage Register reviews.

GLOSSARY

Term	Definition
Adjacent	"contiguous properties as well as properties that are separated from a heritage property by narrow strip of land used as a public or private road, highway, street, lane, trail, right-of-way, walkway, green space, park, and/or easement or as otherwise defined in the municipal official plan" (Ministry of Tourism, Culture and Sport 2010).
Built Heritage Resource (BHR)	"…a building, structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the *Ontario Heritage Act*, or that may be included on local, provincial, federal and/or international registers" (Government of Ontario 2020:41).
Cultural Heritage Landscape (CHL)	"…a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the *Ontario Heritage Act*, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms" (Government of Ontario 2020:42).
Cultural Heritage Resource (CHR)	Includes above-ground resources such as built heritage resources and cultural heritage landscapes, and built or natural features below-ground including archaeological resources (Government of Ontario 2020).
Known Cultural Heritage Resource	A known cultural heritage resource is a property that has recognized cultural heritage value or interest. This can include a property listed on a Municipal Heritage Register, designated under Part IV or V of the *Ontario Heritage Act*, or protected by a heritage agreement, covenant or easement, protected by the *Heritage Railway Stations Protection Act or* the *Heritage Lighthouse Protection Act*, identified as a Federal Heritage Building, or located within a UNESCO World Heritage Site (Ministry of Tourism, Culture and Sport 2016).
Impact	Includes negative and positive, direct and indirect effects to an identified cultural heritage resource. Direct impacts include destruction of any, or part of any, significant heritage attributes or features and/or unsympathetic or incompatible alterations to an identified resource.

	Indirect impacts include, but are not limited to, creation of shadows, isolation of heritage attributes, direct or indirect obstruction of significant views, change in land use, land disturbances (Ministry of Tourism and Culture 2006). Indirect impacts also include potential vibration impacts (See Section 2.5 for complete definition and discussion of potential impacts).
Mitigation	Mitigation is the process of lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the cultural heritage landscape and/or built heritage resource if to be demolished or relocated.
Potential Cultural Heritage Resource	A potential cultural heritage resource is a property that has the potential for cultural heritage value or interest. This can include properties/project area that contain a parcel of land that is the subject of a commemorative or interpretive plaque, is adjacent to a known burial site and/or cemetery, is in a Canadian Heritage River Watershed, or contains buildings or structures that are 40 or more years old (Ministry of Tourism, Culture and Sport 2016).
Significant	With regard to cultural heritage and archaeology resources, significant means “resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the *Ontario Heritage Act.* While some significant resources may already be identified and inventoried by official sources, the significance of others can only be determined after evaluation” (Government of Ontario 2020:51).
Vibration Zone of Influence	Area within a 50 m buffer of construction-related activities in which there is potential to affect an identified cultural heritage resource. A 50 m buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature and direction provided from the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) (Wiss 1981; Rainer 1982; Ellis 1987; Crispino and D’Apuzzo 2001; Carman et al. 2012). This buffer accommodates the additional threat from collisions with heavy machinery or subsidence (Randl 2001).

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1.0 INTRODUCTION

1.1 Report Purpose

ASI was contracted by R.V. Anderson Associates Ltd., on behalf of the City of Guelph, to conduct a Cultural Heritage Report as part of the Downtown Infrastructure Revitalization Program. The purpose of this Desktop Results report is to present a list of previously-identified known and potential cultural heritage resources (CHRs). Once a preferred design is selected, field work will be undertaken. Following field review, this report will be updated to describe the existing conditions of the study area and present an inventory of known and potential CHRs, which may include additional potential CHRs identified during field review. A preliminary impact assessment will assess potential impacts of the proposed undertaking and propose appropriate mitigation measures and recommendations for minimizing and avoiding negative impacts on identified CHRs.

1.2 Project Overview

The Guelph Downtown Infrastructure Revitalization Program involves road reconstruction and streetscape improvements. The project study area consists of the area designated as Downtown Guelph in the Downtown Secondary Plan, but is limited to that portion north of the Metrolinx railway tracks. It is generally bounded by the Speed River to the north, the Metrolinx railway tracks to the southeast, and residential development to the southwest.

The Downtown Infrastructure Revitalization Program includes three components:

Capital Implementation Plan
The Capital Implementation Plan is the overall capital program for reconstruction and improvement of public infrastructure within the road allowance within the project study area.

Wyndham Street Environmental Assessment
This EA considers Wyndham Street North from Carden Street to Woolwich Street. The objectives are to improve pedestrian, cyclist, transit and vehicular movement along Wyndham Street North and particularly through the St. George's Square area at the Wyndham/Quebec/Douglas intersections to support the community building goals of the City for its Downtown Area as envisioned in the Downtown Streetscape Manual, 2014.

Macdonell and Allan Structures Environmental Assessment
This EA considers the Macdonell Bridge and Allan Bridge/Spillway structures along the Macdonell Street Corridor from Woolwich Street to Arthur Street North. The objectives are to improve and modify the Macdonell Bridge and Allan Bridge/Spillway structures and surrounding area along the Macdonell Street Corridor from Woolwich Street to Arthur Street North at the Speed River to rehabilitate the structures and facilitate the City's proposed Downtown Infrastructure Revitalization Program.

This desktop Cultural Heritage Report will consider properties within all three components of the Downtown Infrastructure Revitalization Program.

1.3 Description of Study Area

This Cultural Heritage Report will focus on the project study area and adjacent properties (Figure 1). This project study area has been defined as inclusive of those lands that may contain CHRs that may be subject to direct or indirect impacts as a result of the proposed undertaking. Properties within the study area are located in the City of Guelph.

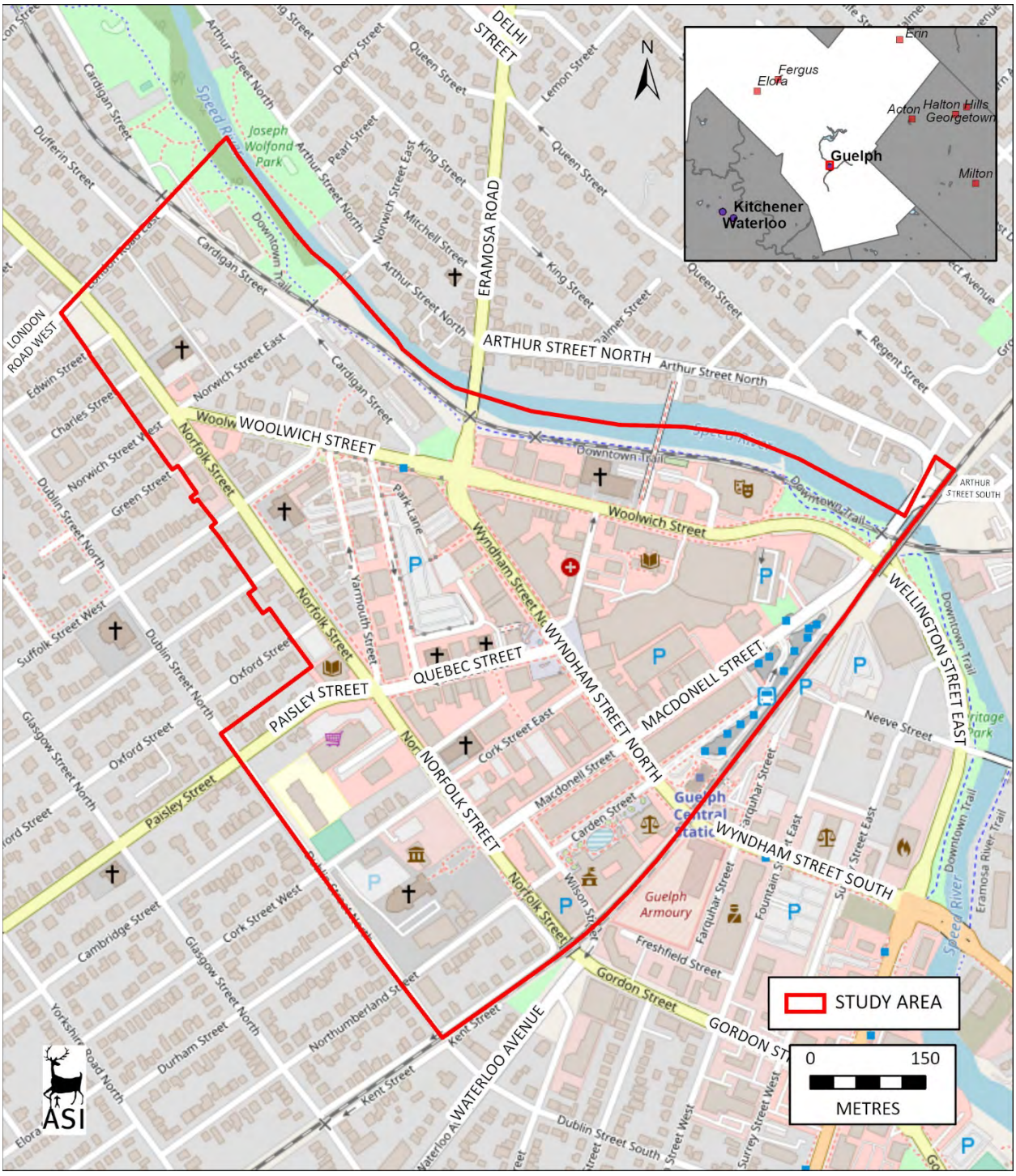

Figure 1: Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)

2.0 METHODOLOGY

2.1 Regulatory Requirements

The *Ontario Heritage Act* (OHA) (Ministry of Culture 1990) is the primary piece of legislation that determines policies, priorities and programs for the conservation of Ontario's heritage. There are many other provincial acts, regulations and policies governing land use planning and resource development support heritage conservation including:

- The *Planning Act* (Ministry of Municipal Affairs and Housing 1990), which states that "conservation of features of significant architectural, cultural, historical, archaeological or scientific interest" (cultural heritage resources) is a "matter of provincial interest". The Provincial Policy Statement (Government of Ontario 2020), issued under the Planning Act, links heritage conservation to long-term economic prosperity and requires municipalities and the Crown to conserve significant cultural heritage resources.
- The *Environmental Assessment Act* (Ministry of the Environment 1990), which defines "environment" to include cultural conditions that influence the life of humans or a community. Cultural heritage resources, which includes archaeological resources, built heritage resources and cultural heritage landscapes, are important components of those cultural conditions.

The Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) is charged under Section 2.0 of the OHA with the responsibility to determine policies, priorities, and programs for the conservation, protection, and preservation of the heritage of Ontario. The Ministry of Tourism, Culture and Sport (now administered by MHSTCI) published *Standards and Guidelines for Conservation of Provincial Heritage Properties* (Ministry of Tourism, Culture and Sport 2010) (hereinafter "Standards and Guidelines"). These Standards and Guidelines apply to properties the Government of Ontario owns or controls that have cultural heritage value or interest (CHVI). The Standards and Guidelines provide a series of guidelines that apply to provincial heritage properties in the areas of identification and evaluation; protection; maintenance; use; and disposal. For the purpose of this report, the Standards and Guidelines provide points of reference to aid in determining potential heritage significance in identification of BHRs and CHLs. While not directly applicable for use in properties not under provincial ownership, the Standards and Guidelines are regarded as best practice for guiding heritage assessments and ensure that additional identification and mitigation measures are considered.

Similarly, the *Ontario Heritage Tool Kit* (Ministry of Culture 2006) provides a guide to evaluate heritage properties. To conserve a BHR or CHL, the *Ontario Heritage Tool Kit* states that a municipality or approval authority may require a heritage impact assessment and/or a conservation plan to guide the approval, modification, or denial of a proposed development.

2.2 Municipal/Regional Heritage Policies

The study area is located within the City of Guelph. Policies relating to cultural heritage resources were reviewed from the following sources:

- City of Guelph *Official Plan,* which includes the Downtown Secondary Plan (City of Guelph 2018)

2.3 Identification of Built Heritage Resources and Cultural Heritage Landscapes

This Cultural Heritage Report follows guidelines presented in the *Ontario Heritage Tool Kit* (Ministry of Culture 2006) and *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (Ministry of Tourism, Culture and Sport 2016). The objective of this desktop report is to present a list of previously identified known and potential cultural heritage resources (CHRs) within the study area based on the results of background research and desktop data collection, and to provide a preliminary understanding of known and potential CHRs located within areas anticipated to be directly or indirectly impacted by the proposed project. Following field review, this report will be updated to describe the existing conditions of the study area and present an inventory of known and potential CHRs, which may include additional CHRs identified during field review.

In the course of the cultural heritage assessment process, all potentially affected CHRs are subject to identification and inventory. Generally, when conducting an identification of CHRs within a study area, three stages of research and data collection are undertaken to appropriately establish the potential for and existence of CHRs in a geographic area: background research and desktop data collection; field review; and identification.

Background historical research, which includes consultation of primary and secondary source research and historical mapping, is undertaken to identify early settlement patterns and broad agents or themes of change in a study area. This stage in the data collection process enables the researcher to determine the presence of sensitive heritage areas that correspond to nineteenth- and twentieth-century settlement and development patterns. To augment data collected during this stage of the research process, federal, provincial, and municipal databases and/or agencies are consulted to obtain information about specific properties that have been previously identified and/or designated as having cultural heritage value. Typically, resources identified during these stages of the research process are reflective of particular architectural styles or construction methods, associated with an important person, place, or event, and contribute to the contextual facets of a particular place, neighbourhood, or intersection.

A field review is then undertaken to confirm the location and condition of previously identified CHRs. The field review is also used to identify potential CHRs that have not been previously identified on federal, provincial, or municipal databases or through other appropriate agency data sources.

During the cultural heritage assessment process, a property is identified as a potential CHR based on research, the MHSTCI screening tool, and professional expertise and best practice. In addition, use of a 40-year-old benchmark is a guiding principle when conducting a preliminary identification of CHRs. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this benchmark provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from having cultural heritage value or interest.

2.4 Background Information Review

To make an identification of previously identified known or potential CHRs within the study area, the following sections present the resources that were consulted as part of this Cultural Heritage Report.

2.4.1 Review of Existing Heritage Inventories

A number of resources were consulted in order to identify previously identified BHRs and CHLs within the study area. These resources, reviewed in June 2021, include:

- The City of Guelph's *Municipal Register of Cultural Heritage Properties* (City of Guelph 2019);
- The City of Guelph's Cultural Heritage Action Plan (City of Guelph and MHBC 2020);
- The *Ontario Heritage Act Register* (Ontario Heritage Trust n.d.);
- The *Places of Worship Inventory* (Ontario Heritage Trust n.d.);
- The inventory of Ontario Heritage Trust easements (Ontario Heritage Trust n.d.);
- The Ontario Heritage Trust's Ontario Heritage Plaque Guide: an online, searchable database of Ontario Heritage Plaques (Ontario Heritage Trust n.d.);
- Inventory of known cemeteries/burial sites in the Ontario Genealogical Society's online databases (Ontario Genealogical Society n.d.);
- Canada's Historic Places website: available online, the searchable register provides information on historic places recognized for their heritage value at the local, provincial, territorial, and national levels (Parks Canada n.d.);
- Directory of Federal Heritage Designations: a searchable on-line database that identifies National Historic Sites, National Historic Events, National Historic People, Heritage Railway Stations, Federal Heritage Buildings, and Heritage Lighthouses (Parks Canada n.d.);
- Canadian Heritage River System: a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage (Canadian Heritage Rivers Board and Technical Planning Committee n.d.); and,
- United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites (UNESCO World Heritage Centre n.d.).

2.4.2 Review of Previous Heritage Reporting

Additional cultural heritage studies undertaken within parts of the study area were also reviewed. These include:

- Cultural Heritage Assessment Report, Kitchener Corridor Expansion Program, Guelph Subdivision TPAP ((ASI 2020a);
- Cultural Heritage Evaluation Report – Speed River Bridge, Mile 48.50 (ASI 2020b); and,
- Heritage Impact Assessment - Speed River Bridge (ASI 2020c).

2.4.3 Stakeholder Data Collection

The following individuals, groups, and/or organizations were contacted to gather information on known and potential BHRs and CHLs:

- Stephen Robinson, Senior Heritage Planner, City of Guelph (email communication April 30, May 14, 21, 25, June 21 and 24, 2021). Mr. Robinson provided GIS data of existing heritage properties within the study area and recommended the review of the *Cultural Heritage Action Plan*. Requests were made for Reasons for Listings reports for listed properties and for the exact boundaries of Candidate CHLs within the study area, but a response to these requests was not received by the time of report submission.
- The MHSTCI (email communication June 14 and 24, 2021). A response identified one property adjacent to the study area as a Provincial Heritage Property.
- The Ontario Heritage Trust (email communication June 14 and 18, 2021). A response identified three properties within the study area with Ontario Heritage Trust conservation easements.

2.5 Preliminary Impact Assessment Methodology

To assess the potential impacts of the undertaking, identified BHRs and CHLs are considered against a range of possible negative impacts, based on the *Ontario Heritage Tool Kit InfoSheet #5: Heritage Impact Assessments and Conservation Plans* (Ministry of Tourism and Culture 2006). These include:

- Direct impacts:
    - Destruction of any, or part of any, significant heritage attributes or features; and
    - Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.
- Indirect impacts:
    - Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden;
    - Isolation of a heritage attribute from its surrounding environment, context or a significant relationship;
    - Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features;
    - A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces; and
    - Land disturbances such as a change in grade that alters soils, and drainage patterns that adversely affect an archaeological resource.

Indirect impacts from construction-related vibration have the potential to negatively affect BHRs or CHLs depending on the type of construction methods and machinery selected for the project and proximity and composition of the identified resources. Potential vibration impacts are defined as having potential to affect an identified BHRs and CHLs where work is taking place within 50 m of features on the property. A 50 m buffer is applied in the absence of a project-specific defined vibration zone of influence based on existing secondary source literature and direction provided from the MHSTCI (Wiss 1981; Rainer 1982; Ellis 1987; Crispino and D'Apuzzo 2001; Carman et al. 2012). This buffer accommodates any additional or potential threat from collisions with heavy machinery or subsidence (Randl 2001).

Several additional factors are also considered when evaluating potential impacts on identified BHRs and CHLs. These are outlined in a document set out by the Ministry of Culture and Communications (now

MHSTCI) and the Ministry of the Environment entitled *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (1992) and include:

- Magnitude: the amount of physical alteration or destruction which can be expected;
- Severity: the irreversibility or reversibility of an impact;
- Duration: the length of time an adverse impact persists;
- Frequency: the number of times an impact can be expected;
- Range: the spatial distribution, widespread or site specific, of an adverse impact; and
- Diversity: the number of different kinds of activities to affect a heritage resource.

The proposed undertaking should endeavor to avoid adversely affecting known and potential BHRs and CHLs and interventions should be managed in such a way that identified significant cultural heritage resources are conserved. When the nature of the undertaking is such that adverse impacts are unavoidable, it may be necessary to implement alternative approaches or mitigation strategies that alleviate the negative effects on identified BHRs and CHLs. Mitigation is the process of lessening or negating anticipated adverse impacts to cultural heritage resources and may include, but are not limited to, such actions as avoidance, monitoring, protection, relocation, remedial landscaping, and documentation of the BHR or CHL if to be demolished or relocated.

Various works associated with infrastructure improvements have the potential to affect BHRs and CHLs in a variety of ways, and as such, appropriate mitigation measures for the undertaking need to be considered.

3.0 SUMMARY OF HISTORICAL DEVELOPMENT WITHIN THE STUDY AREA

This section provides a brief summary of historical research. A review of available primary and secondary source material was undertaken to produce a contextual overview of the study area, including a general description of physiography, Indigenous land use, and Euro-Canadian settlement.

3.1 Physiography

The study area is situated within the Guelph Drumlin Field physiographic region of southern Ontario. The Guelph Drumlin Field centres upon the City of Guelph and Guelph Township and occupies roughly 830 km^2. Within the Guelph Drumlin Field, there are approximately 300 drumlins (hills) of varying sizes. The majority of downtown Guelph is located between drumlins on a gravel terrace at the confluence of the Speed and Eramosa Rivers, the forerunners of which were two large glacial spillways. As the city has grown it has spread over the surrounding hills. The Basilica of Our Lady Immaculate was sited atop a drumlin at the end of Macdonald Street (Chapman and Putnam 1984:137–139). Guelph's founding on the southern bank of the Speed River took advantage of its proximity to the Guelph Formation, comprised of dolomitic limestone "easily worked and of a superior kind for building purposes", which was extensively used in City of Guelph buildings (Historical Atlas Publishing Co. 1906:1).

3.2 Summary of Early Indigenous History in Southern Ontario

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years ago, or 11,000 Before the Common Era (B.C.E.) (Ferris 2013).[1] During the Paleo period (c. 11,000 B.C.E. to 9,000 B.C.E), groups tended to be small, nomadic, and non-stratified. The population relied on hunting, fishing, and gathering for sustenance, though their lives went far beyond subsistence strategies to include cultural practices including but not limited to art and astronomy. Fluted points, beaked scrapers, and gravers are among the most important artifacts to have been found at various sites throughout southern Ontario, and particularly along the shorelines of former glacial lakes. Given the low regional population levels at this time, evidence concerning Paleo-Indian period groups is very limited (Ellis and Deller 1990).

Moving into the Archaic period (c. 9,000 B.C.E. to 1,000 B.C.E.), many of the same roles and responsibilities continued as they had for millennia, with groups generally remaining small, nomadic, and non-hierarchical. The seasons dictated the size of groups (with a general tendency to congregate in the spring/summer and disperse in the fall/winter), as well as their various sustenance activities, including fishing, foraging, trapping, and food storage and preparation. There were extensive trade networks which involved the exchange of both raw materials and finished objects such as polished or ground stone tools, beads, and notched or stemmed projectile points. Furthermore, mortuary ceremonialism was evident, meaning that there were burial practices and traditions associated with a group member's death (Ellis and Deller 1990; Ellis et al. 2009).

The Woodland period (c. 1,000 B.C.E. to 1650 C.E.) saw several trends and aspects of life remain consistent with previous generations. Among the more notable changes, however, was the introduction of pottery, the establishment of larger occupations and territorial settlements, incipient horticulture, more stratified societies, and more elaborate burials. Later in this period, settlement patterns, foods, and the socio-political system continued to change. A major shift to agriculture occurred in some regions, and the ability to grow vegetables and legumes such as corn, beans, and squash ensured long-term settlement occupation and less dependence upon hunting and fishing. This development contributed to population growth as well as the emergence of permanent villages and special purpose sites supporting those villages. Furthermore, the socio-political system shifted from one which was strongly kinship based to one that involved tribal differentiation as well as political alliances across and between regions (Ellis and Deller 1990; Williamson 1990; Dodd et al. 1990; Birch and Williamson 2013).

The arrival of European trade goods in the sixteenth century, Europeans themselves in the seventeenth century, and increasing settlement efforts in the eighteenth century all significantly impacted traditional ways of life in Southern Ontario. Over time, war and disease contributed to death, dispersion, and displacement of many Indigenous peoples across the region. The Euro-Canadian population grew in both numbers and power through the eighteenth and nineteenth centuries and treaties between colonial administrators and First Nations representatives began to be negotiated.

[1] While many types of information can inform the precontact settlement of Ontario, such as oral traditions and histories, this summary provides information drawn from archaeological research conducted in southern Ontario over the last century.

The study area is within Treaty 3, the Between the Lakes Purchase. Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and insured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston 1964; Lytwyn 2005). In 1784, under the terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in-part spanning westward from near modern day Niagara-on-the-Lake along the south shore of Lake Ontario to modern day Burlington (Aboriginal Affairs and Northern Development Canada 2016).

3.3 Historical Euro-Canadian Township Survey and Settlement

Historically, the study area is located in the Township of Guelph, County of Wellington. The following sections present the survey and settlement history of this area and an overview of the development of the railway transportation network in the area.

3.3.1 County of Wellington

Prior to 1849, Wellington County was part of the much larger Wellington District, which comprised all of contemporary Wellington, Waterloo, and Grey Counties, as well as a portion of Dufferin County. Wellington County was named after Arthur Wellesley, the First Duke of Wellington, England. Between 1849 and 1854 it was a part of Waterloo County with the Village of Guelph as the county seat. Shortly thereafter it was separated out; the original townships in the county were Amaranth, Arthur, Eramosa, Erin, Garafaxa, Guelph, Maryborough, Nichol, Peel, Pilkington and Puslinch (Historical Atlas Publishing Co. 1906).

3.3.2 Township of Guelph

Guelph Township was named after the Royal House of Brunswick, family of the English monarch, George IV. Guelph Township was surveyed by John MacDonald in 1830 and the land in the township was purchased by the Canada Company, which consisted of a group of British speculators who acquired more than two million acres of land in Upper Canada for colonization purposes (Mika and Mika 1981). A large number of settlers arrived in the township before it was surveyed. The first settler in the township was Samuel Rife, who squatted near the western limits of the township around the year 1825.

Waterloo Road, formerly Broad Road, was built by Absalom Shade and was finished around 1827, the year the Town of Guelph was founded (Mika and Mika 1981). Many settlers arrived in the township between the years 1827 and 1830.

3.3.3 City of Guelph

While the present boundaries for the City of Guelph fall within the former Townships of Puslinch and Guelph, the historical community of Guelph was situated on the River Speed in Guelph Township. Guelph was first laid out by a novelist named John Galt, who also held the role of Superintendent of the Canada Company, in 1827. The original plan for the town depicted lots reserved for the company offices, a saw mill, a market square, two churches, and a burial ground. Registered plans of subdivision for this village date from 1847 to 1865. The first settlers were attracted here in the next few years. By the late 1840s, the population of Guelph had reached 1,480, and it was incorporated as a town in 1850. It was also selected as the capital of Wellington County, and it was also deemed to be an inland port of entry. The population had reached 6,878 by 1873. By April 1879, the population exceeded 10,000 and Guelph was incorporated as a city. Guelph contained a wide variety of trades and professions by the 1840s (see Johnson 1977:83). By the 1870s, Guelph contained numerous churches, banks, insurance agencies, a library, two newspapers, telegraph offices, hotels, stores, flour, saw, and planing mills, woollen factories, foundries, machinery works, sewing machine works, musical instrument manufacturers, tanneries, soap and candle factories, shoemakers, wooden ware manufacturers, and two breweries. It was a station for both the Grand Trunk Railway and the Canadian Pacific Railway. Guelph was built on a number of hills which gives it a picturesque appearance, and a number of fine heritage structures in the city were built out of local limestone (Cameron 1967; Crossby 1873; Fischer and Harris 2007; Rayburn 1997; Scott 1997; Winearls 1991).

3.3.4 Transportation Development

Grand Trunk Railway

The Grand Trunk Railway (GTR) Company of Canada was incorporated by the Canadian government in 1852 and was planned to connect Toronto to Montreal. It began in 1853 by purchasing five existing railways: the St. Lawrence and Atlantic Railroad Company, the Quebec and Richmond Railroad Company, the Toronto and Guelph Railroad Company, the Grand Junction Railroad Company, and the Grand Trunk Railway Company of Canada East. By 1853, the Toronto and Guelph Railroad Company had already begun construction of its line. After it merged with the Grand Trunk Railway Company, the line was redirected from its original route and extended to Sarnia to be a hub for Chicago-bound traffic. By 1856 the line had been built from Montreal to Sarnia via Toronto (Library and Archives Canada 2005). In 1920, control of the GTR was assumed by the Canadian Government and three years later, in 1923, the GTR was amalgamated with CNR (Andreae 1997).

Guelph Junction Railway

The Guelph Junction Railway (GJR) was established in 1884 by the citizens of Guelph who were seeking an alternative to the GTR monopoly that could offer improved rates and service. Work commenced in the fall of 1886 to construct a line from a point south of the Grand Trunk Railway in Guelph to a connection with the Credit Valley Railway near Campbellville. By the time the line opened in September 1888, the directors of the GJR had entered into an agreement with the Canadian Pacific Railway (CPR)

for the lease and operation of the line. The GJR continues to be owned and operated by the City of Guelph (Hughes 1997).

3.4 Review of Historical Mapping

The 1827 Plan of the Town of Guelf (Anon 1827), 1861 Map of Wellington County (Leslie and Wheelock 1861), and 1872 Aerial Plan of Guelph (Brosius 1872) were examined to determine the presence of historical features within the study area during the nineteenth century (Figures 2 to 4). Historically, the study area is located in the Township of Guelph, County of Wellington.

It should be noted, however, that not all features of interest were mapped systematically in historical maps. For instance, historical atlas maps were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The 1827 Plan of the Town of Guelf (Figure 2) shows the initial town layout along the southern bank of the Speed River. The street and lotting pattern within the study area radiates outward from an apex at the bend in the Speed River. This resulted in an irregular, radial street pattern within downtown Guelph. South of the downtown area, the lots follow a standard grid pattern. Features shown on the plan include a bridge over the Speed River at the bend (at location of present day Arthur Street bridge), St. Patrick's Church, St. George's Church, a General Burying Ground, a market building and grounds, and a saw mill. Roads to Woolwich, Eramosa and York are noted.

The 1861 Map of Wellington County (Figure 3) shows the streets with much the same layout as the 1827 Plan, with the area subdivided into town lots. The development of the community is evident, with the addition of a Court House, the construction of a Scotch Church on the market grounds, and the construction of the GTR passing through the market grounds at the southern edge of the study area. A pass station is located north of the market grounds.

The 1872 Aerial Plan of Guelph (Figure 4) shows Guelph as a bustling city, with numerous features that remain today, including Old City Hall, St. George's Square, St. Andrew's Presbyterian Church, First Baptist Church, and bridge crossings at Macdonell Street, Eramosa Road and Norwich Street East. Guelph's commercial centre is contained within the study area, with commercial blocks illustrated that are still extant today. Industrial properties are sited along the riverbanks. Residential areas are found around the edges of the study area, and residential growth is visible in all directions surrounding the study area.

In addition to nineteenth-century mapping, historical topographic mapping and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1906, 1935, 1955, 1975, and 2021(Figure 5 to Figure 9). These do not represent the full range of maps

consulted for the purpose of this study but were judged to cover the full range of land uses that occurred in the area during this period.

The 1906 Illustrated Historical Atlas map of Guelph (Figure 5) depicts a limited number of features, but shows the GJR line running along the northern edge of the study area, on the southern bank of the Speed River, with a CPR station located on McDonnell Street north of the GTR station. The route of the Guelph Radial Railway is also depicted running through the study area. A post office is located on St. George's Square. Development is depicted in all directions surrounding the study area. McDonnell, Norfolk, Suffolk Streets and Eramosa Road are highlighted as major routes providing access into the city core. Additional bridge crossings over the Speed River are depicted east of the study area.

The 1935 topographic map (Figure 6) depicts limited additional features within the study area, but identifies the railway lines, numerous churches and the post office, and the Heffernan Street footbridge. Norfolk Street (Highway 6) is depicted as a paved road.

The 1955 aerial photograph of Guelph (Figure 7) depicts a fully developed downtown core within the study area with dense streetwalls along the commercial streets. The original radial street layout is largely intact. St. George's Square is a prominent feature, as is the property containing the Basilica of Our Lady Immaculate near the southern corner of the study area. The surrounding residential areas have extensive tree cover.

The 1975 National Topographic System (Figure 8) map depicts a number of key features within the study area, including Old City Hall, a Court House, churches, a dam at the northern corner of the study area, the train station at the northeastern corner of Carden and Wyndham Streets. Both major rail lines are depicted but the Guelph Radial Railway has been removed. Wyndham Street is identified as forming part of Highway 24.

The 2021 aerial photo of the City of Guelph (Figure 9) shows that the study area continues to function as the city's downtown core and retains many historical features mentioned in the mapping review above. Notable changes include the construction of the Old Quebec Street shopping mall, the Sleeman Centre on Woolwich Street, and a new City Hall south of Old City Hall. Woolwich Street has been realigned where it meets MacDonell Street.

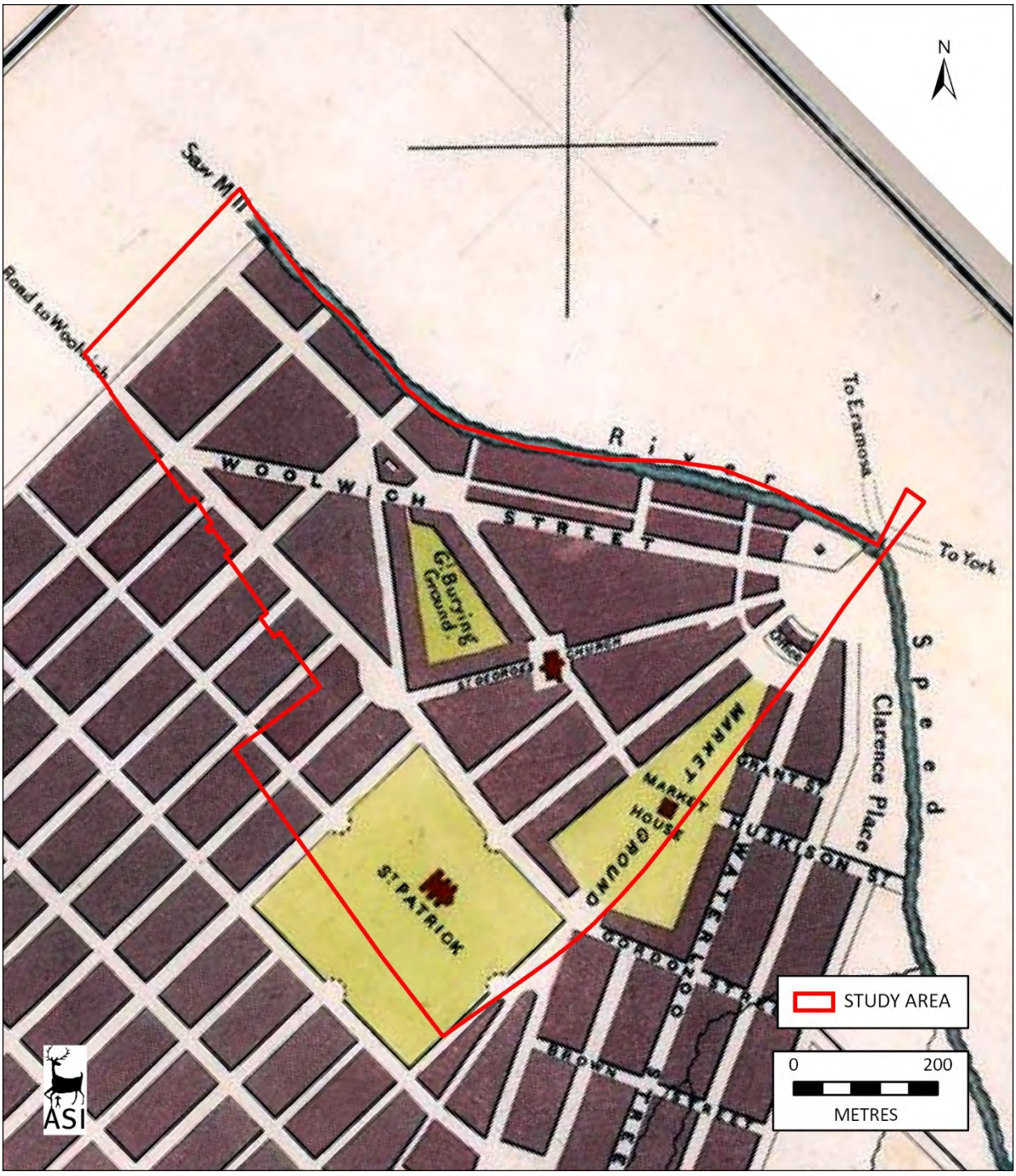

Figure 2: The study area overlaid on the 1827 Plan of the Town of Guelf (Base map: Anon 1827)

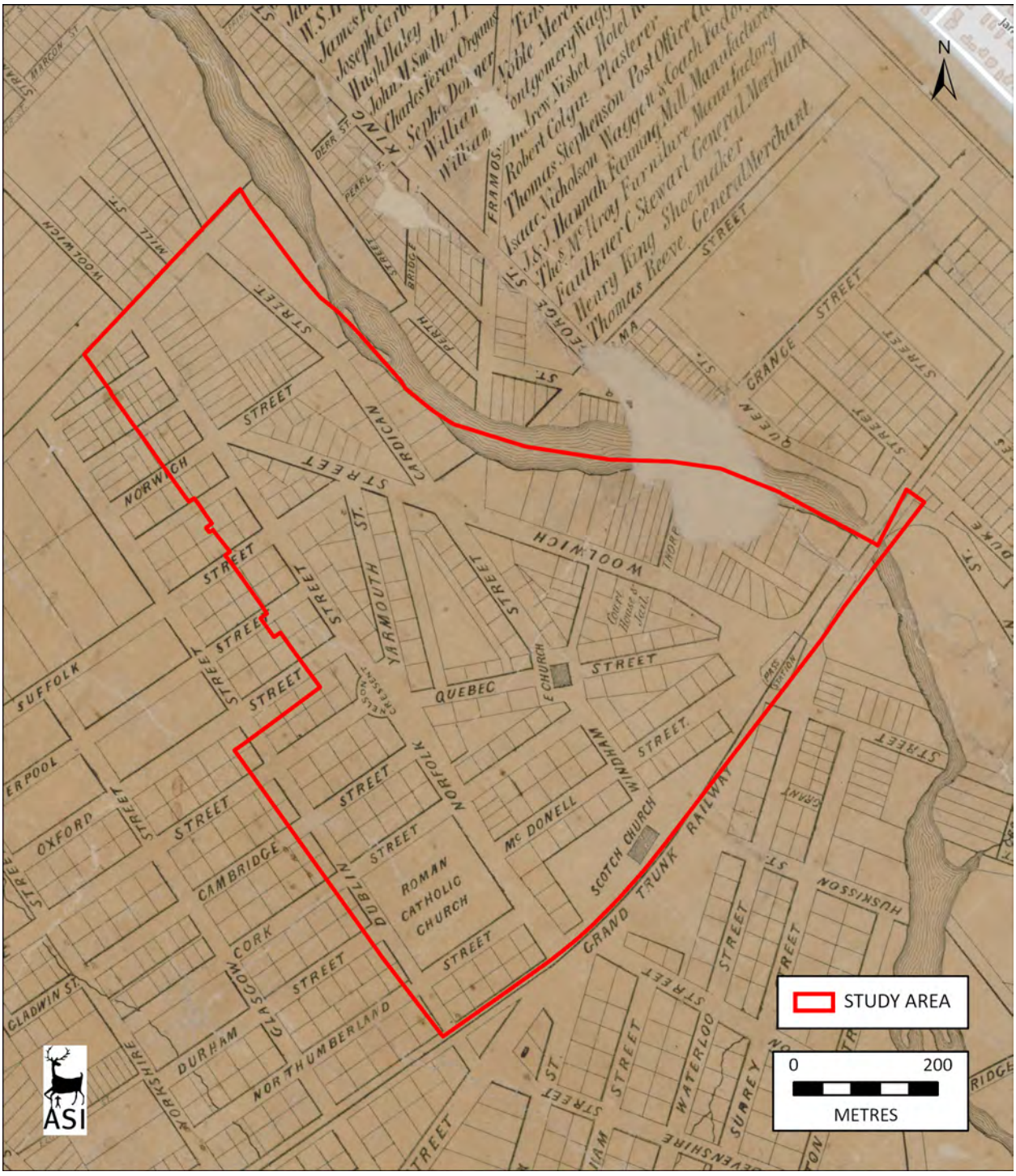

Figure 3: The study area overlaid on the 1861 Map of Wellington County (Base Map: Leslie and Wheelock 1861)

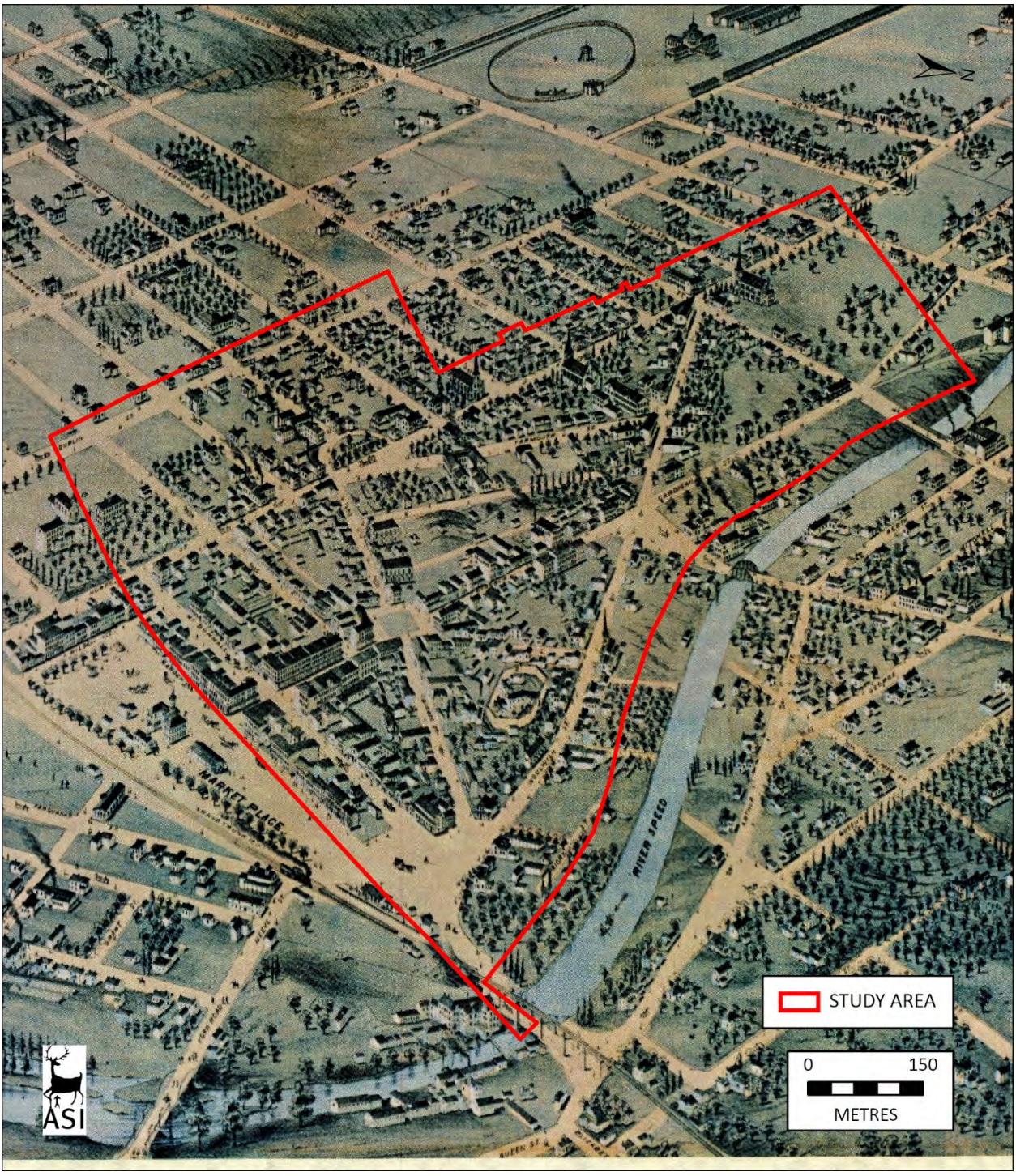

Figure 4: The study area overlaid on the 1872 Aerial Plan of Guelph (Base Map: Brosius 1872)

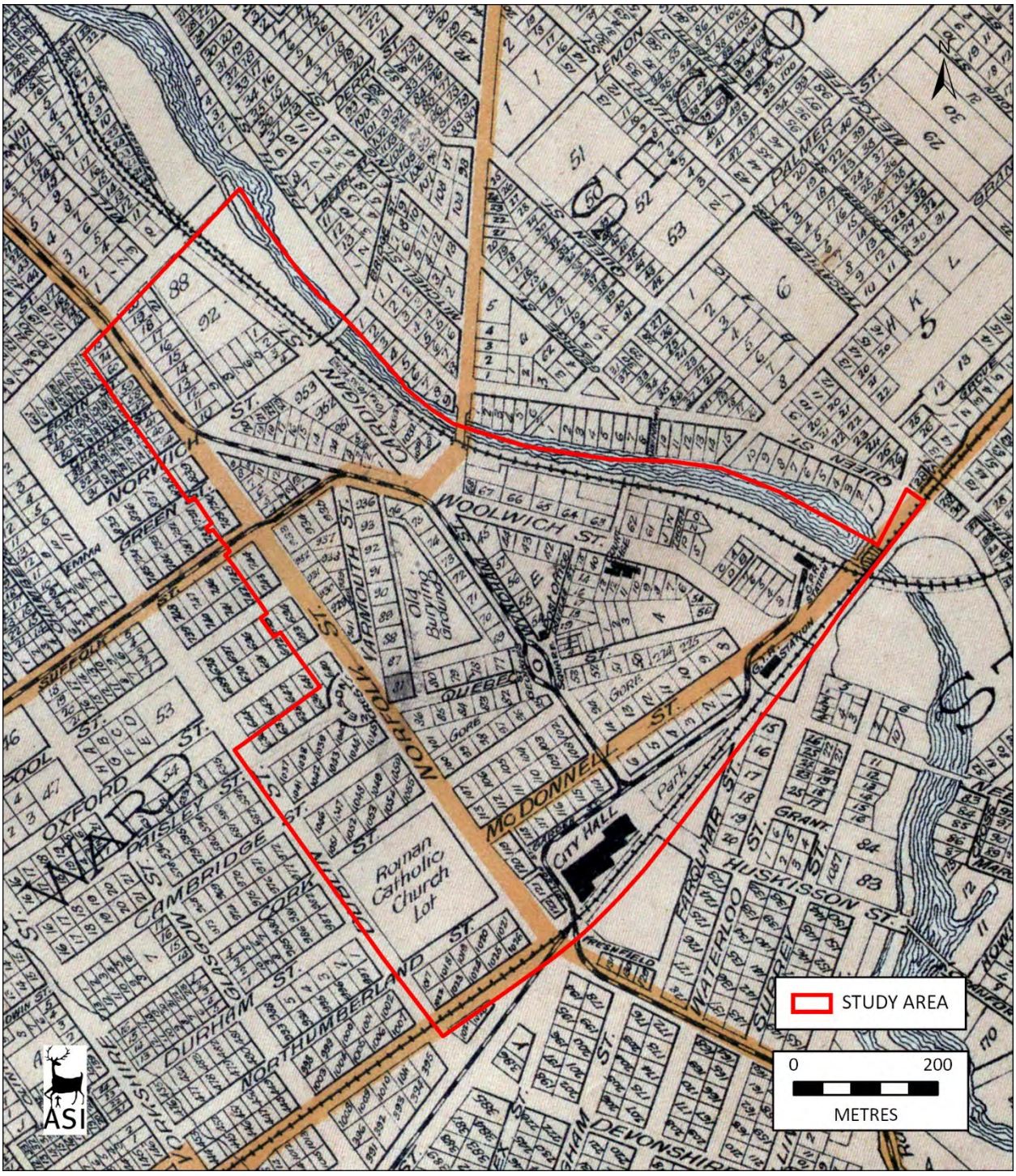

Figure 5: The study area overlaid on the 1906 Illustrated Historical Atlas detail map of Guelph (Base Map: Historical Atlas Publishing Co. 1906)

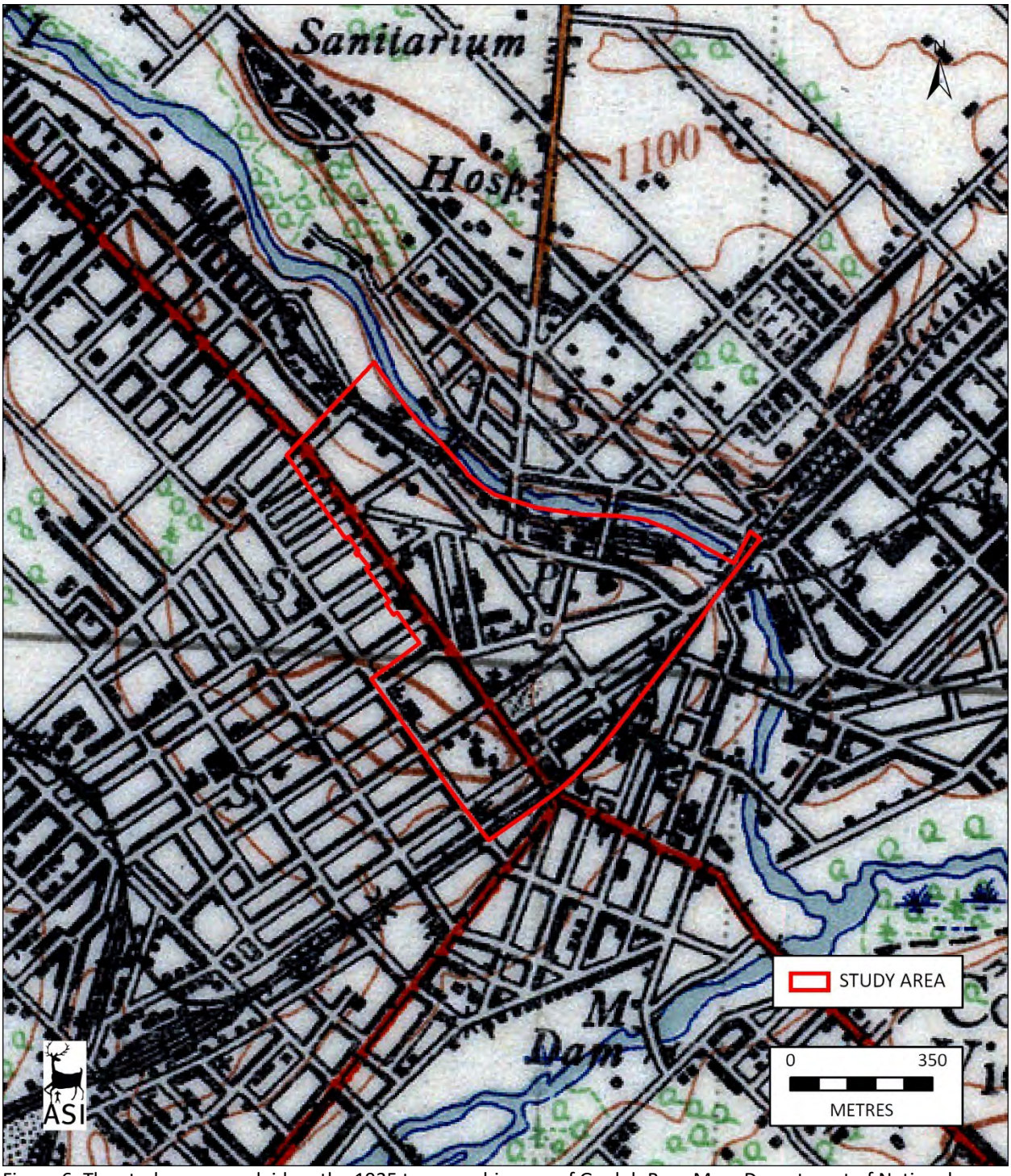

Figure 6: The study area overlaid on the 1935 topographic map of Guelph Base Map: Department of National Defence 1935)

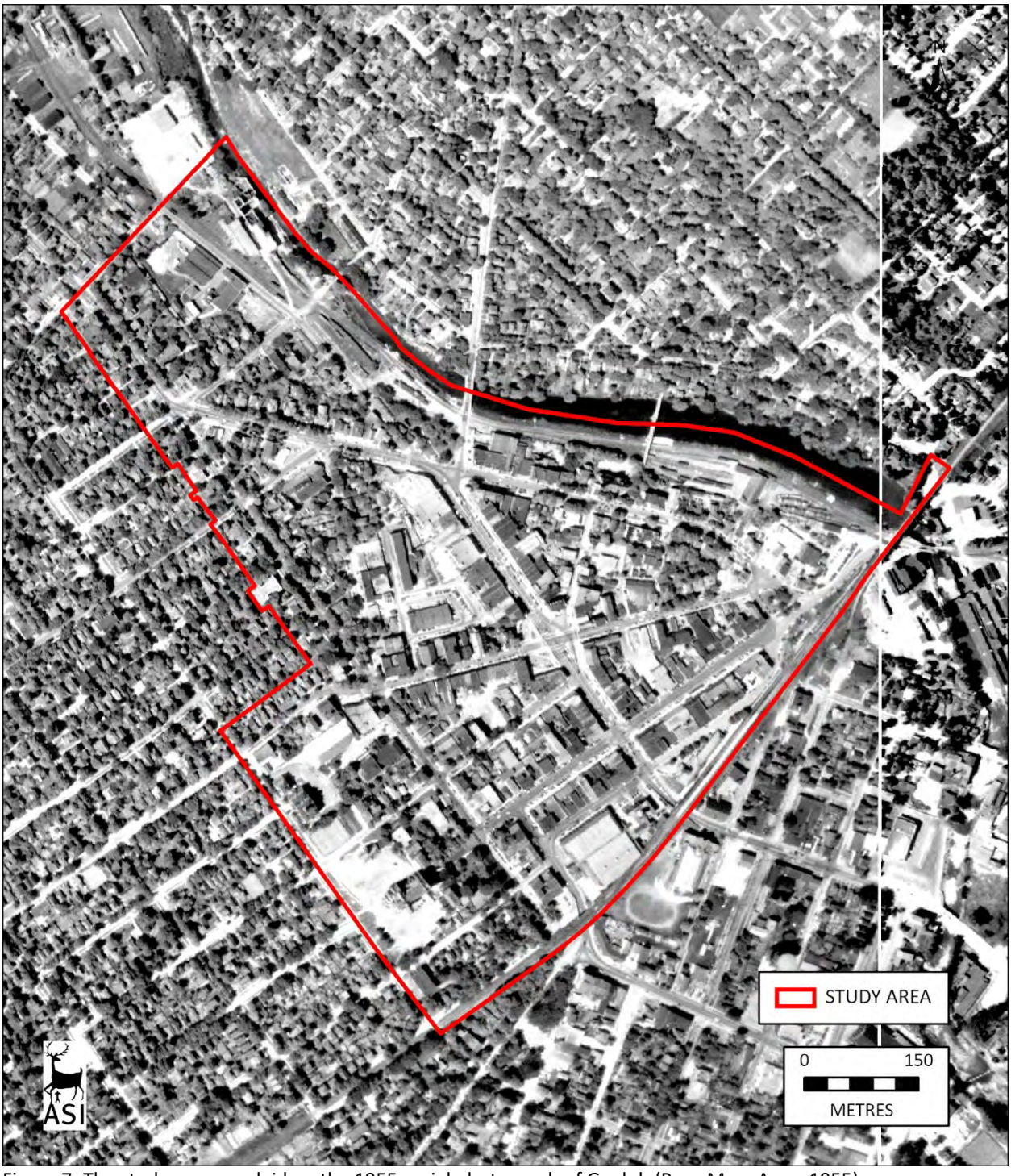

Figure 7: The study area overlaid on the 1955 aerial photograph of Guelph (Base Map: Anon 1955)

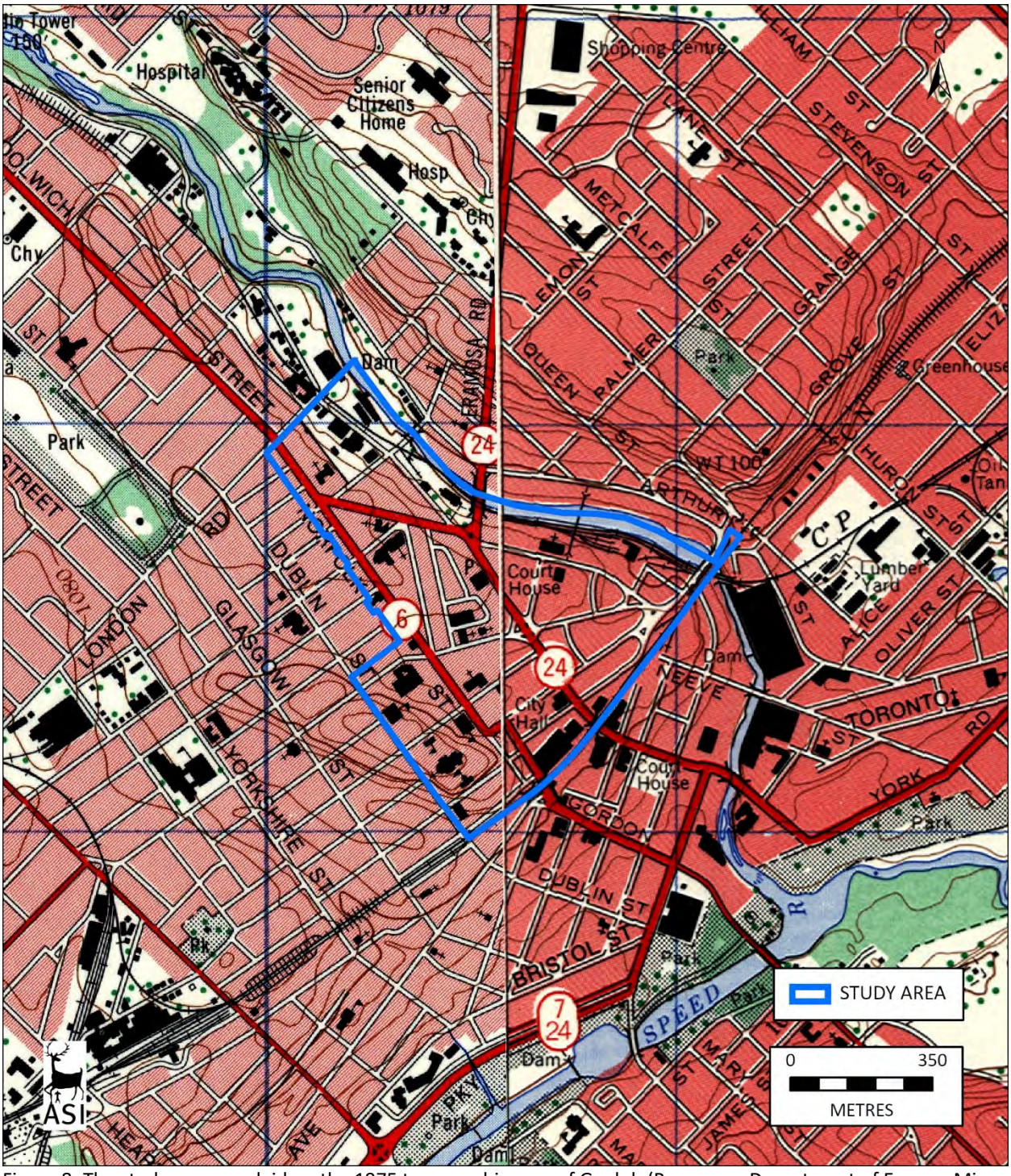

Figure 8: The study area overlaid on the 1975 topographic map of Guelph (Base map: Department of Energy, Mines and Resources 1975)

Figure 9: The study area overlaid on a 2021 aerial image of the City of Guelph (Basemap: Google 2021)

4.0 IDENTIFICATION OF KNOWN AND POTENTIAL CULTURAL HERITAGE RESOURCES

Based on the results of the background research, a total of 253 known and potential CHRs were identified within the study area. A total of 214 properties are known CHRs, of which 26 properties are designated under Part IV of the *Ontario Heritage Act* and 180 properties are listed on the City's Municipal Heritage Register. Seven additional known CHRs are commemorative plaques placed by the Ontario Heritage Trust. One known CHR is a designated Canadian Heritage River (in addition to being identified as a Candidate Cultural Heritage Landscape by the City of Guelph). A total of 35 properties are potential CHRs, of which 33 are identified as Potential Heritage Resources by the City of Guelph and two are identified as Candidate Cultural Heritage Landscapes by the City of Guelph.

Four municipally-designated CHRs are subject to conservation easements by the Ontario Heritage Trust. Two municipally-designated CHRs are also designated National Historic Sites. One municipally-designated CHR is also a designated Heritage Railway Station of Canada. One listed property is also a Provincial Heritage Property.

Four CHRs previously identified by the City of Guelph have been demolished.

A list of known and potential CHRs within the study area is presented below in Table 1. See Figures Figure 10 to 19 for mapping showing the location of identified CHRs. It should be noted that the boundaries for CHR 251 (Old Downtown Candidate CHL), 252 (Riverscape Candidate CHL) and 253 (Catholic Hill Candidate CHL) are preliminary and have been approximated based on preliminary mapping in the *Cultural Heritage Action Plan*, but exact boundaries for these CHRs have not been received from the City of Guelph. Should these boundaries be received from the City, the Existing Conditions report will be updated to include them.

Designation by-laws and documents for designated properties are included in Appendix A.

Table 1: Inventory of Known and Potential Cultural Heritage Resources within the Study Area

CHR #	Address/Location	Heritage Status
1	10 Edwin St	Known CHR - Listed on Municipal Heritage Register
2	268-270 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1980)-10466)
3	264 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1979)-10058)
4	258 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1983)-11332)
5	8/10 Charles St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
6	250-252 Woolwich St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
7	3/5/7/9 Norwich St W	Known CHR - Listed on Municipal Heritage Register
8	240 Woolwich St	Known CHR - Listed on Municipal Heritage Register
9	1 Norwich St W	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
10	289 Woolwich St	Known CHR - Listed on Municipal Heritage Register
11	15 London Rd E	Known CHR - Listed on Municipal Heritage Register
12	19 London Rd E	Known CHR - Listed on Municipal Heritage Register
13	285 Woolwich St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
14	279 Woolwich St	Known CHR - Listed on Municipal Heritage Register
15	275 Woolwich St	Known CHR - Listed on Municipal Heritage Register
16	265 Woolwich St	Known CHR - Listed on Municipal Heritage Register
17	259 Woolwich St - main house	Known CHR - Listed on Municipal Heritage Register
18	255 Woolwich St	Known CHR - Listed on Municipal Heritage Register
19	18 Norwich St E	Known CHR - Listed on Municipal Heritage Register
20	20 Norwich St E	Known CHR - Listed on Municipal Heritage Register
21	25/27 London Rd E	Known CHR - Listed on Municipal Heritage Register
22	29 London Rd E	Known CHR - Listed on Municipal Heritage Register
23	122/124 Cardigan St	Known CHR – Designated under Part IV of the Ontario Heritage Act
24	75 Cardigan St	Known CHR - Listed on Municipal Heritage Register
25	70 Norwich St E	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1983)-11332)
26	30 Norwich St E - House	Known CHR - Listed on Municipal Heritage Register
27	34 Norwich St E	Known CHR - Listed on Municipal Heritage Register
28	40 Norwich St E	Known CHR - Listed on Municipal Heritage Register
29	60 Cardigan St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
30	Norwich St Bridge over the Speed River	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1998)-15786)
31	206 Norfolk St	Known CHR - Listed on Municipal Heritage Register
32	190-194 Norfolk St	Known CHR - Listed on Municipal Heritage Register
33	186 Norfolk St	Known CHR - Listed on Municipal Heritage Register
34	10 Suffolk St W	Known CHR - Listed on Municipal Heritage Register
35	2 Suffolk St W	Known CHR - Listed on Municipal Heritage Register
36	160 Norfolk St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
37	150 Norfolk St	Known CHR - Listed on Municipal Heritage Register
38	228 Woolwich St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
39	191/193 Norfolk St	Known CHR - Listed on Municipal Heritage Register
40	187 Norfolk St	Known CHR - Listed on Municipal Heritage Register
41	183 Norfolk St	Known CHR - Listed on Municipal Heritage Register
42	177 Norfolk St	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
43	214 Woolwich St	Known CHR - Listed on Municipal Heritage Register
44	208 Woolwich St	Known CHR - Listed on Municipal Heritage Register
45	10 Suffolk St E	Known CHR - Listed on Municipal Heritage Register
46	200 Woolwich St	Known CHR - Listed on Municipal Heritage Register
47	231 Woolwich St	Known CHR - Listed on Municipal Heritage Register
48	229 Woolwich St	Demolished
49	221 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1992)-14065)
50	215 Woolwich St	Known CHR - Listed on Municipal Heritage Register
51	207 Woolwich St - House	Known CHR - Listed on Municipal Heritage Register
52	199 Woolwich St	Known CHR - Listed on Municipal Heritage Register
53	191-193 Woolwich St	Known CHR - Listed on Municipal Heritage Register
54	185 Woolwich St	Known CHR - Listed on Municipal Heritage Register
55	28-30 Cardigan St	Known CHR - Listed on Municipal Heritage Register
56	173 Woolwich St	Known CHR - Listed on Municipal Heritage Register
57	167-169 Woolwich St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
58	33 Norwich St E	Known CHR - Listed on Municipal Heritage Register
59	37 Norwich St E	Known CHR - Listed on Municipal Heritage Register
60	41 Norwich St E	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
61	46 Cardigan St	Known CHR - Listed on Municipal Heritage Register
62	44 Cardigan St	Known CHR - Listed on Municipal Heritage Register
63	40/42 Cardigan St	Known CHR - Listed on Municipal Heritage Register
64	126 Norfolk St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
65	122 Norfolk St - Garage	Known CHR - Listed on Municipal Heritage Register
66	147 Norfolk St	Known CHR - Listed on Municipal Heritage Register
67	143 Norfolk St - House	Known CHR - Listed on Municipal Heritage Register
68	137 Norfolk St	Known CHR - Listed on Municipal Heritage Register
69	131 Norfolk St	Known CHR - Listed on Municipal Heritage Register
70	123 Norfolk St	Known CHR - Listed on Municipal Heritage Register
71	119/121 Norfolk St	Known CHR - Listed on Municipal Heritage Register
72	111-113/115 Norfolk St	Known CHR - Listed on Municipal Heritage Register
73	109 Norfolk St	Known CHR - Listed on Municipal Heritage Register
74	50 Yarmouth St	Known CHR - Listed on Municipal Heritage Register
75	54/56 Yarmouth St	Known CHR - Listed on Municipal Heritage Register
76	7-27 Suffolk St E	Known CHR - Listed on Municipal Heritage Register
77	Yarmouth St - IODE Fountain	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1993)-14439)

CHR #	Address/Location	Heritage Status
78	176 Woolwich St	Known CHR - Listed on Municipal Heritage Register
79	170/172 Woolwich St	Known CHR - Listed on Municipal Heritage Register
80	74-76 Baker St	Known CHR - Listed on Municipal Heritage Register
81	29-37 Yarmouth St*	Known CHR - Listed on Municipal Heritage Register *address change from 51-59 Yarmouth - need Council approval for change to Register
82	40 Baker St	Known CHR - Listed on Municipal Heritage Register
83	30 Baker St	Known CHR - Listed on Municipal Heritage Register
84	15 Yarmouth St	Known CHR - Listed on Municipal Heritage Register
85	150 Woolwich St	Known CHR - Listed on Municipal Heritage Register
86	176 Wyndham St N	Demolished
87	166 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
88	160-164 Wyndham St N.	Demolished
89	146-150 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
90	138 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17979)
91	120 -126 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
92	116-118 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
93	110-114 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
94	102 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
95	98 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
96	20 Quebec St	Known CHR - Listed on Municipal Heritage Register
97	30/32 Quebec St	Known CHR - Listed on Municipal Heritage Register
98	44/46 Quebec St	Known CHR - Listed on Municipal Heritage Register
99	50 Quebec St	Known CHR - Listed on Municipal Heritage Register
100	Eramosa Rd (Cenotaph)	Known CHR - Listed on Municipal Heritage Register
101	147-159 Wyndham St N (Wellington Hotel)	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1979)-10057);Subject to a conservation easement by the Ontario Heritage Trust
102	137-145 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
103	128 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17980)
104	133 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17980)
105	116-122 Woolwich St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2006)-17980)
106	125 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
107	123-125 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
108	115-121 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
109	107-109 Wyndham St N	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
110	101-109 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
111	97-99 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
112	93 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
113	6 Douglas St	Known CHR - Listed on Municipal Heritage Register
114	8-12 Douglas St	Known CHR - Listed on Municipal Heritage Register
115	16 Douglas St	Known CHR - Listed on Municipal Heritage Register
116	18 Douglas St	Known CHR - Listed on Municipal Heritage Register
117	20 Douglas St	Known CHR - Listed on Municipal Heritage Register
118	24 Douglas St	Known CHR - Listed on Municipal Heritage Register
119	30/32 Douglas St	Known CHR - Listed on Municipal Heritage Register
120	100-104 Woolwich St	Known CHR - Listed on Municipal Heritage Register
121	106/108 Woolwich St	Known CHR - Listed on Municipal Heritage Register
122	110/112 Woolwich St	Known CHR - Listed on Municipal Heritage Register
123	115/117 Woolwich St	Known CHR - Listed on Municipal Heritage Register
124	99 Woolwich St - Church	Known CHR - Listed on Municipal Heritage Register
125	63 Woolwich St	Demolished
126	59 Woolwich St	Known CHR - Listed on Municipal Heritage Register
127	MacDonell St (Railway Viaduct)	Known CHR - Listed on Municipal Heritage Register
128	Wellington St E - Allan's Mill Ruins	Known CHR - Listed on Municipal Heritage Register
129	123 Dublin St N	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
130	121 Dublin St N	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
131	35 Paisley St	Known CHR - Listed on Municipal Heritage Register
132	29 Paisley St	Known CHR - Listed on Municipal Heritage Register
133	27 Paisley St	Known CHR - Listed on Municipal Heritage Register
134	25 Paisley St	Known CHR - Listed on Municipal Heritage Register
135	21 Paisley St	Known CHR - Listed on Municipal Heritage Register
136	15/17 Paisley St	Known CHR - Listed on Municipal Heritage Register
137	9/11/13 Paisley St	Known CHR - Listed on Municipal Heritage Register
138	3 Paisley St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
139	107 Dublin Street North (Salvation Army Citadel; Guelph Little Theatre)	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph (demolished; foundation retained)
140	103/105 Dublin St N	Known CHR - Listed on Municipal Heritage Register
141	28 Paisley St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph

CHR #	Address/Location	Heritage Status
142	22 Paisley St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
143	18 Paisley St	Known CHR - Listed on Municipal Heritage Register
144	24 Commercial Street	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
145	27/29 Cork St W	Known CHR - Listed on Municipal Heritage Register
146	27/29 Cork St W	Known CHR - Listed on Municipal Heritage Register
147	21/23 Cork St W	Known CHR - Listed on Municipal Heritage Register
148	14/16 Commercial St	Known CHR - Listed on Municipal Heritage Register
149	80-84 Norfolk St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
150	11 Cork St W	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
151	9 Cork St W	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
152	72 Norfolk St	Known CHR - Listed on Municipal Heritage Register
153	28 Norfolk St – Catholic Hill	Known CHR - Listed on Municipal Heritage Register The Basilica of Our Lady Immaculate is a National Historic Site of Canada designated under the Historic Sites and Monuments Act (1990-02-23)
154	52 Norfolk St (Loretto Convent)	Known CHR - Listed on Municipal Heritage Register
155	9 Cork St E	Known CHR - Listed on Municipal Heritage Register
156	15 Cork St E	Known CHR - Listed on Municipal Heritage Register
157	23 Cork St E	Known CHR - Listed on Municipal Heritage Register
158	20-26 MacDonell St	Known CHR - Listed on Municipal Heritage Register
159	28-32 MacDonell St	Known CHR - Listed on Municipal Heritage Register
160	75 Norfolk St - Church/School	Known CHR - Listed on Municipal Heritage Register
161	20 Cork St E	Known CHR - Listed on Municipal Heritage Register
162	99 Norfolk St Unit UPPER	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1983)-11115)
163	1 Quebec St Unit	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1983)-11115)
164	5/7 Quebec St	Known CHR - Listed on Municipal Heritage Register
165	9 Quebec St	Known CHR - Listed on Municipal Heritage Register
166	11/13 Quebec St	Known CHR - Listed on Municipal Heritage Register
167	15 Quebec St	Known CHR - Listed on Municipal Heritage Register
168	17 Quebec St	Known CHR - Listed on Municipal Heritage Register
169	27 Quebec St	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
170	8 Church Ln	Known CHR - Listed on Municipal Heritage Register
171	37 Quebec St	Known CHR - Listed on Municipal Heritage Register
172	41 Quebec St	Known CHR - Listed on Municipal Heritage Register
173	56 St Georges Sq	Known CHR - Listed on Municipal Heritage Register
174	St Georges Square	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
175	1-7 Douglas St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2008)-18531
176	9 Douglas St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2009)-18752)
177	15 Douglas St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1980)-10467 Parcel includes the Wellington County Courthouse at 74 Woolwich Street which is subject to a conservation easement by the Ontario Heritage Trust
178	84 Woolwich St	Known CHR - Listed on Municipal Heritage Register
179	43 Cork St E	Known CHR - Listed on Municipal Heritage Register
180	45 Cork St E	Known CHR - Listed on Municipal Heritage Register
181	49/51 Cork St E	Known CHR - Listed on Municipal Heritage Register
182	48-52 MacDonell St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1984)-11595)
183	20 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
184	16-18 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
185	12 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1979)-10190)
186	41 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
187	37-43 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
188	29-35 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
189	27 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
190	19-25 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
191	15 Wyndham St N	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1990)-13553)
192	66-70 MacDonell St	Known CHR – Designated under Part IV of the Ontario Heritage Act; By-law number unknown
193	72-76 MacDonell St	Known CHR - Listed on Municipal Heritage Register
194	140 MacDonell St - Blacksmith Fountain	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1988)-12731)
195	80, 82-84 MacDonell St	Known CHR - Listed on Municipal Heritage Register
196	88 MacDonell St	Known CHR - Listed on Municipal Heritage Register
197	90 MacDonell St	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
198	98 MacDonell St	Known CHR - Listed on Municipal Heritage Register
199	40 Northumberland St	Known CHR - Listed on Municipal Heritage Register
200	38 Northumberland St	Known CHR - Listed on Municipal Heritage Register
201	32 Northumberland St	Known CHR - Listed on Municipal Heritage Register
202	30 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
203	28 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
204	22 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
205	18 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
206	14 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
207	47/49 Kent St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
208	45 Kent St	Known CHR - Listed on Municipal Heritage Register
209	31 Kent St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
210	25 Kent St	Known CHR - Listed on Municipal Heritage Register
211	17 Kent St	Known CHR - Listed on Municipal Heritage Register
212	9/11 Kent St	Known CHR - Listed on Municipal Heritage Register
213	6 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
214	2 Northumberland St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
215	49 Norfolk St	Known CHR - Listed on Municipal Heritage Register
216	36/38 Wilson St	Known CHR - Listed on Municipal Heritage Register
217	32 Wilson St	Known CHR - Listed on Municipal Heritage Register
218	28/30 Wilson St	Known CHR - Listed on Municipal Heritage Register
219	24 Wilson St	Known CHR - Listed on Municipal Heritage Register
220	20 Wilson St	Known CHR - Listed on Municipal Heritage Register
221	18 Wilson St	Known CHR - Listed on Municipal Heritage Register
222	17 MacDonell St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
223	6-10 Carden St	Known CHR - Listed on Municipal Heritage Register
224	19 Macdonnell St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
225	14 Carden St	Known CHR - Listed on Municipal Heritage Register
226	23 MacDonell St	Known CHR - Listed on Municipal Heritage Register
227	26 Carden St	Known CHR - Listed on Municipal Heritage Register

CHR #	Address/Location	Heritage Status
228	42 Carden St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
229	43-45 MacDonell St	Potential CHR - Identified as a Potential Heritage Resource by the City of Guelph
230	46-50 Carden St	Known CHR - Listed on Municipal Heritage Register
231	52 Carden St	Known CHR - Listed on Municipal Heritage Register
232	54 Carden St	Known CHR - Listed on Municipal Heritage Register
233	8-10 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
234	59 Carden St	Known CHR – Designated under Part IV of the Ontario Heritage Act; Subject to a conservation easement by the Ontario Heritage Trust; Designated as a National Historic Site under the *Historic Sites and Monuments Act* (1984/11/23)
235	1-5 Wyndham St N	Known CHR - Listed on Municipal Heritage Register
236	72 Carden St	Known CHR - Listed on Municipal Heritage Register
237	82-90 Carden St	Known CHR - Listed on Municipal Heritage Register
238	98 Carden St	Known CHR - Listed on Municipal Heritage Register
239	106 Carden St - Hotel	Known CHR - Listed on Municipal Heritage Register
240	79 Carden St	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (2013)-19615); Subject to a conservation easement by the Ontario Heritage Trust; Designated as a Heritage Railway Station of Canada under the *Heritage Railway Stations Protection Act* (1992-11-06)
241	Heffernan Street Footbridge over the Speed River	Known CHR – Designated under Part IV of the Ontario Heritage Act (By-law (1990)-13541)
242	Allan Bridge/Old Macdonell Street Bridge over the Speed River	Known CHR - Listed on Municipal Heritage Register
243	Macdonell Street Railway Viaduct	Known CHR - Listed on Municipal Heritage Register; identified as a Provincial Heritage Property
244	Plaque at 35 Woolwich St (The Founding of Guelph)	Commemorative feature placed by the Ontario Heritage Trust.
245	Plaque at 35 Woolwich St (John Galt 1779-1839)	Commemorative feature placed by the Ontario Heritage Trust.
246	Plaque at 74 Woolwich St (Wellington County Court House)	Commemorative feature placed by the Ontario Heritage Trust.
247	Plaque at 99 Woolwich St (Henry Langley 1836-1907)	Commemorative feature placed by the Ontario Heritage Trust.
248	Plaque at 59 Carden St (Guelph City Hall 1856)	Commemorative feature placed by the Ontario Heritage Trust.

CHR #	Address/Location	Heritage Status
249	Plaque at 28 Norfolk St (Joseph Connolly 1840-1904)	Commemorative feature placed by the Ontario Heritage Trust.
250	Plaque at 100 Norfolk St (Guelph Public Library)	Commemorative feature placed by the Ontario Heritage Trust.
251	Old Downtown CHL	Potential CHR - Identified as a candidate CHL in the Cultural Heritage Action Plan
252	Riverscape CHL	Potential CHR - Identified as a candidate CHL in the Cultural Heritage Action Plan; The Speed River is also identified as forming part of the Grand River, designated as a National Heritage River in 1994.
253	Catholic Hill CHL	Potential CHR - Identified as a candidate CHL in the Cultural Heritage Action Plan

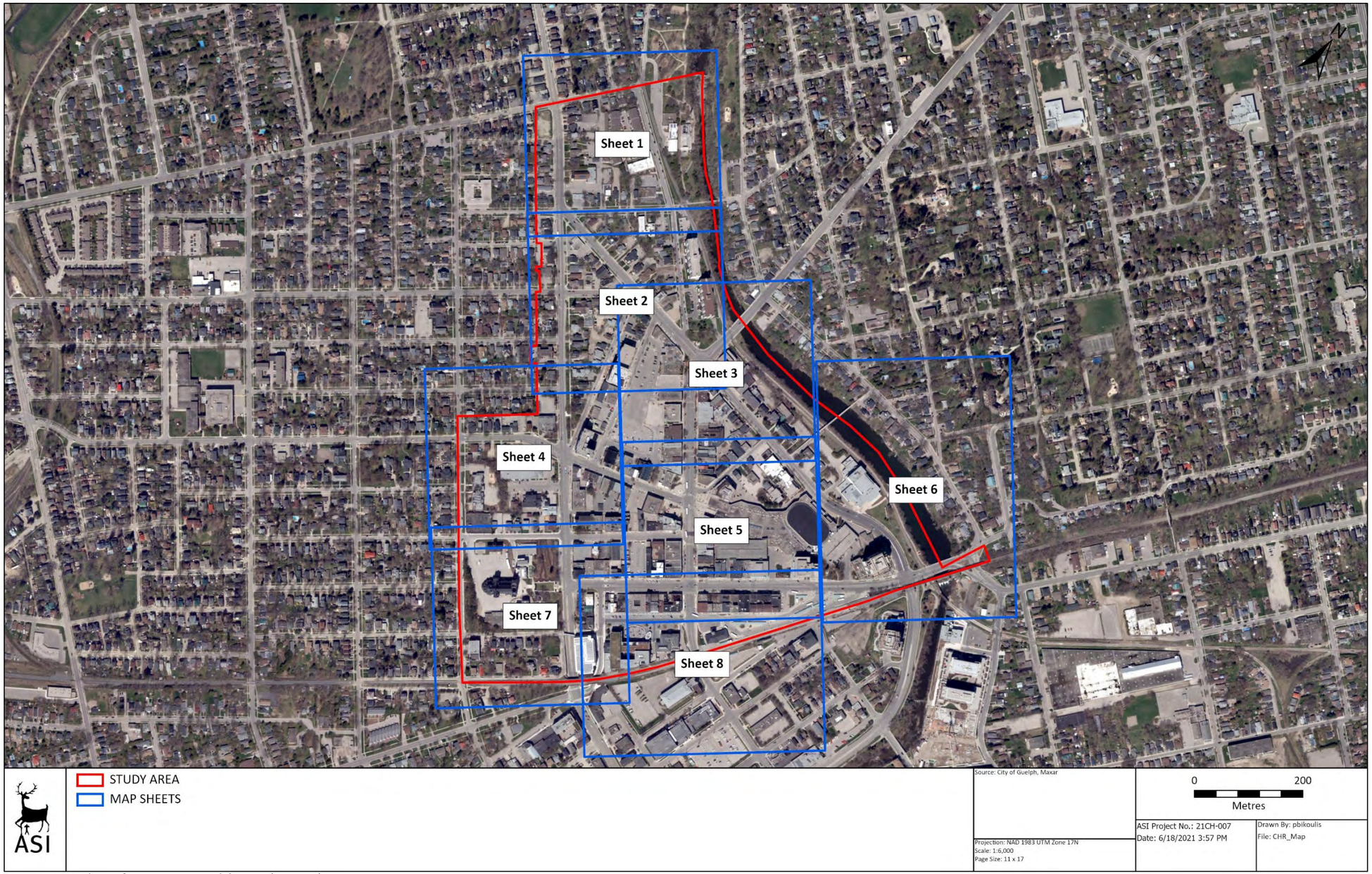

Figure 10: Location of Identified Cultural Heritage Resources in the Study Area (Map Key)

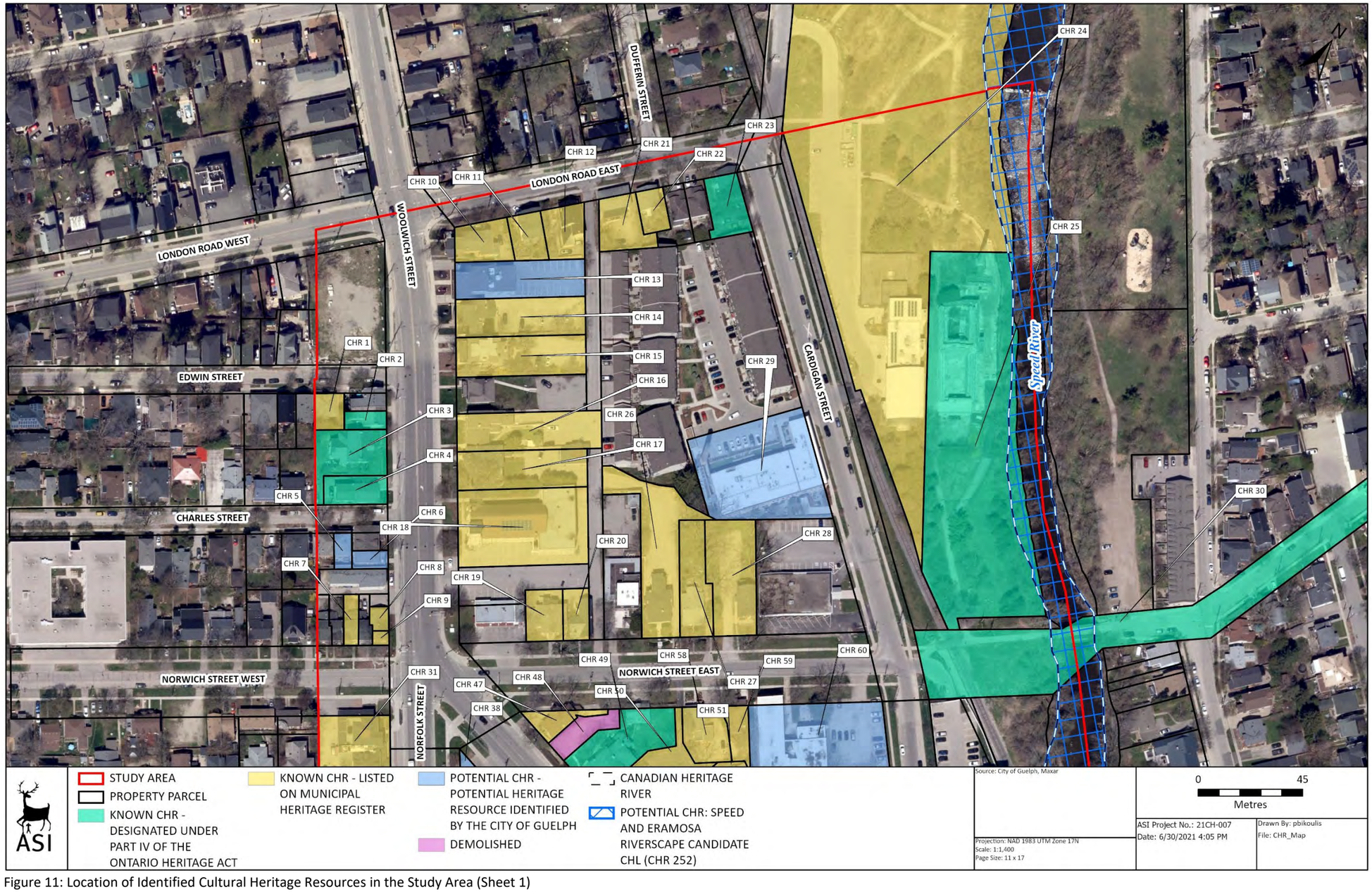

Figure 11: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 1)

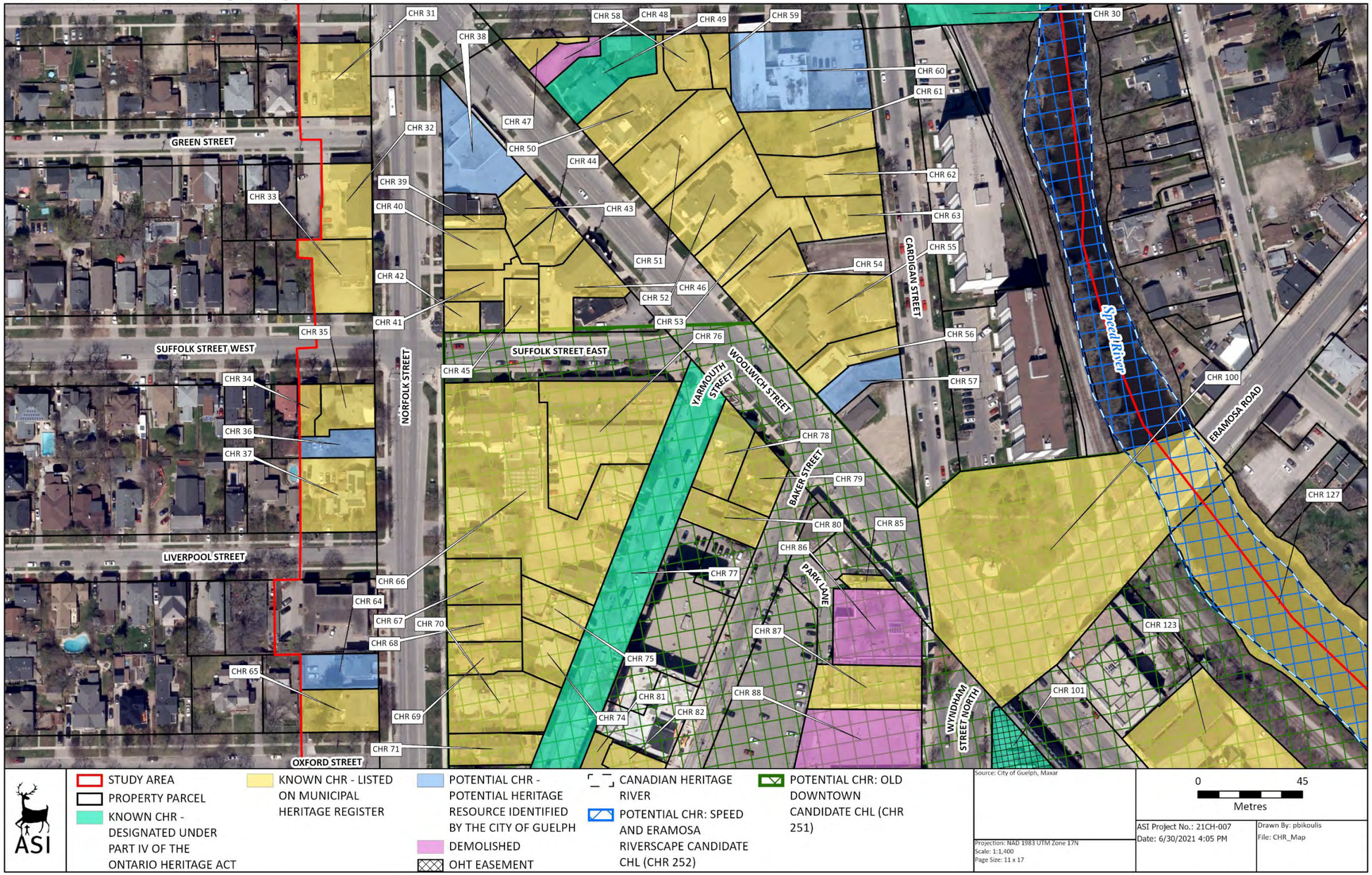

Figure 12: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 2)

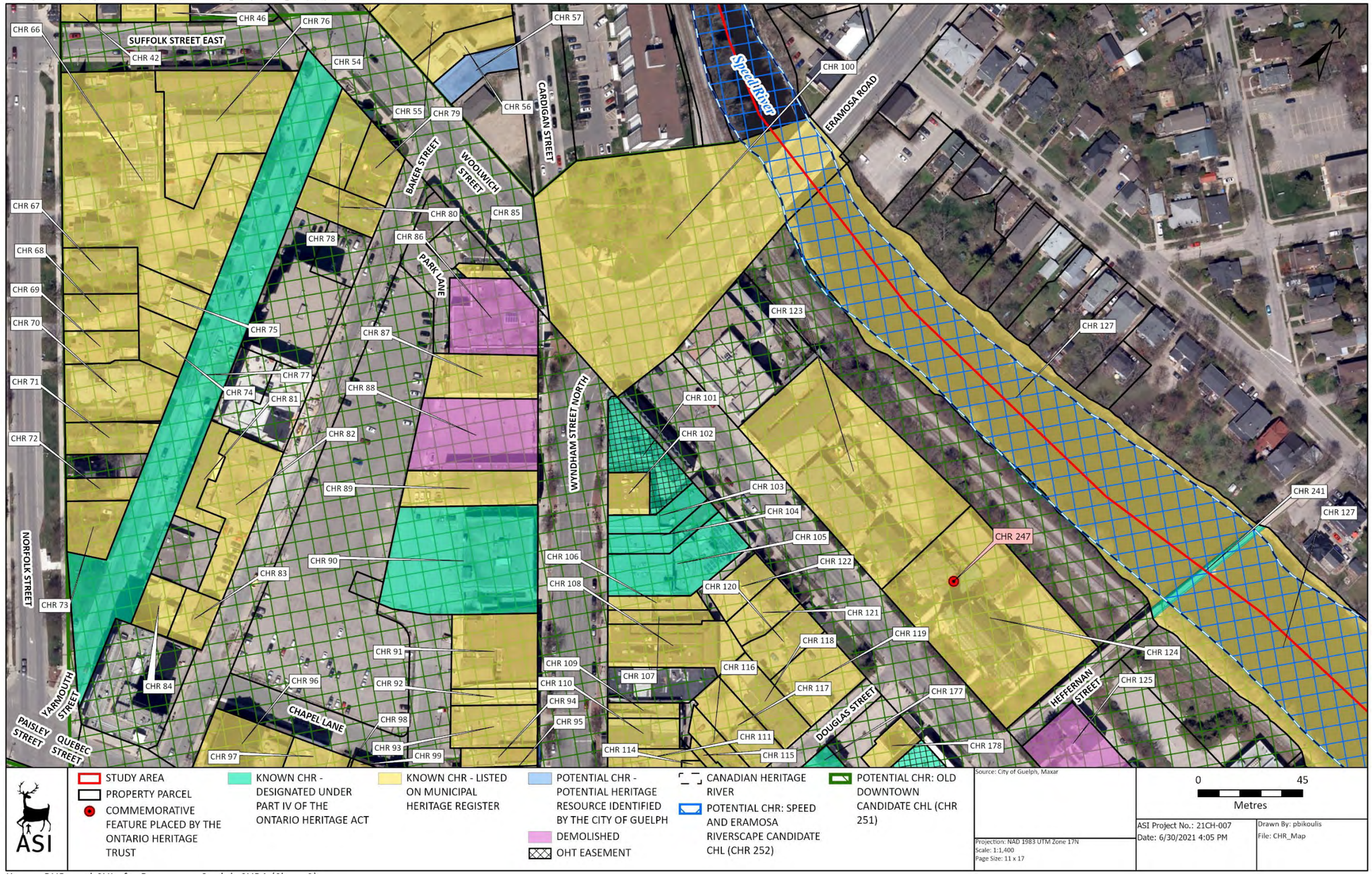

Figure 13: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 3)

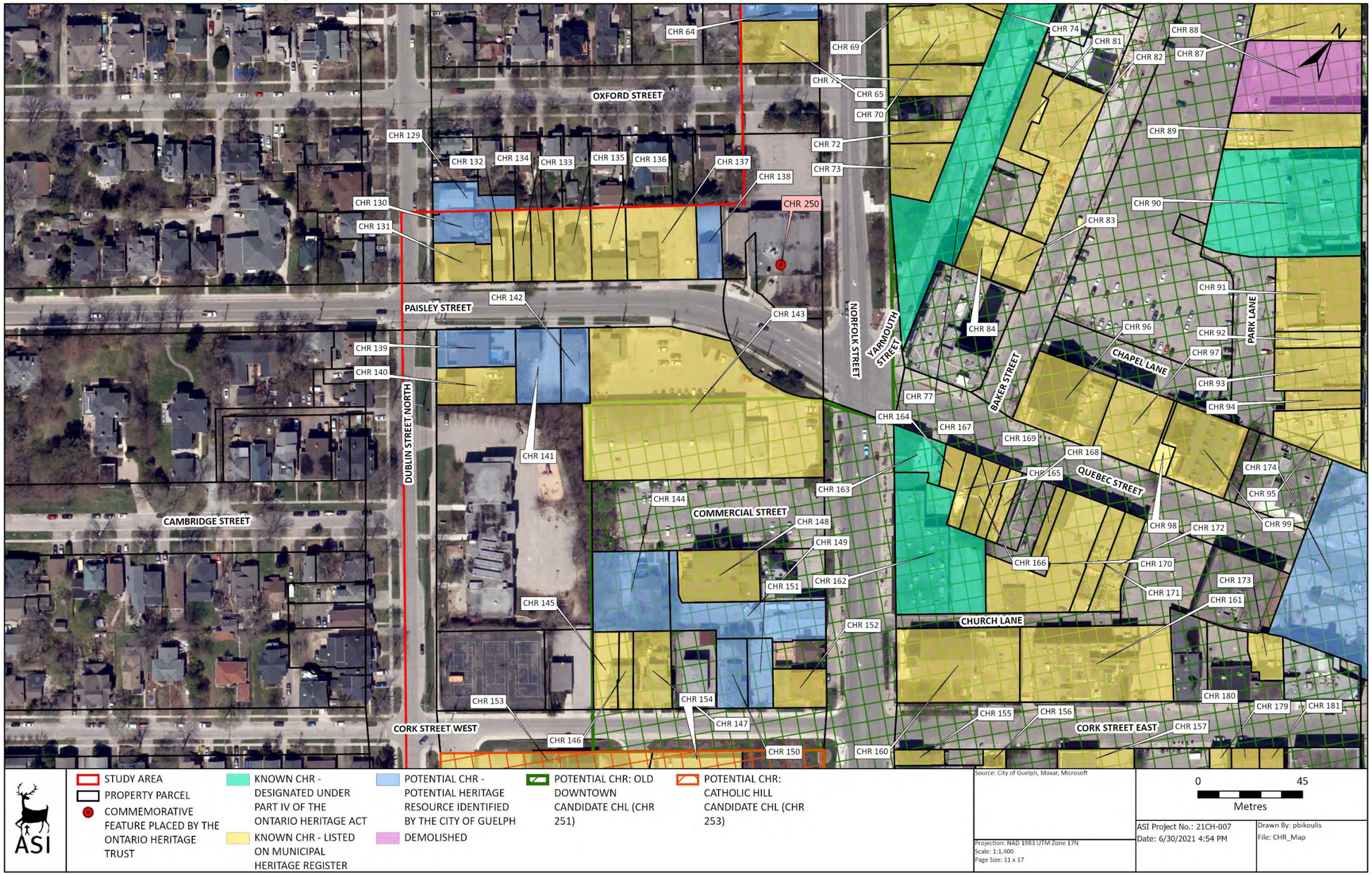

Figure 14: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 4)

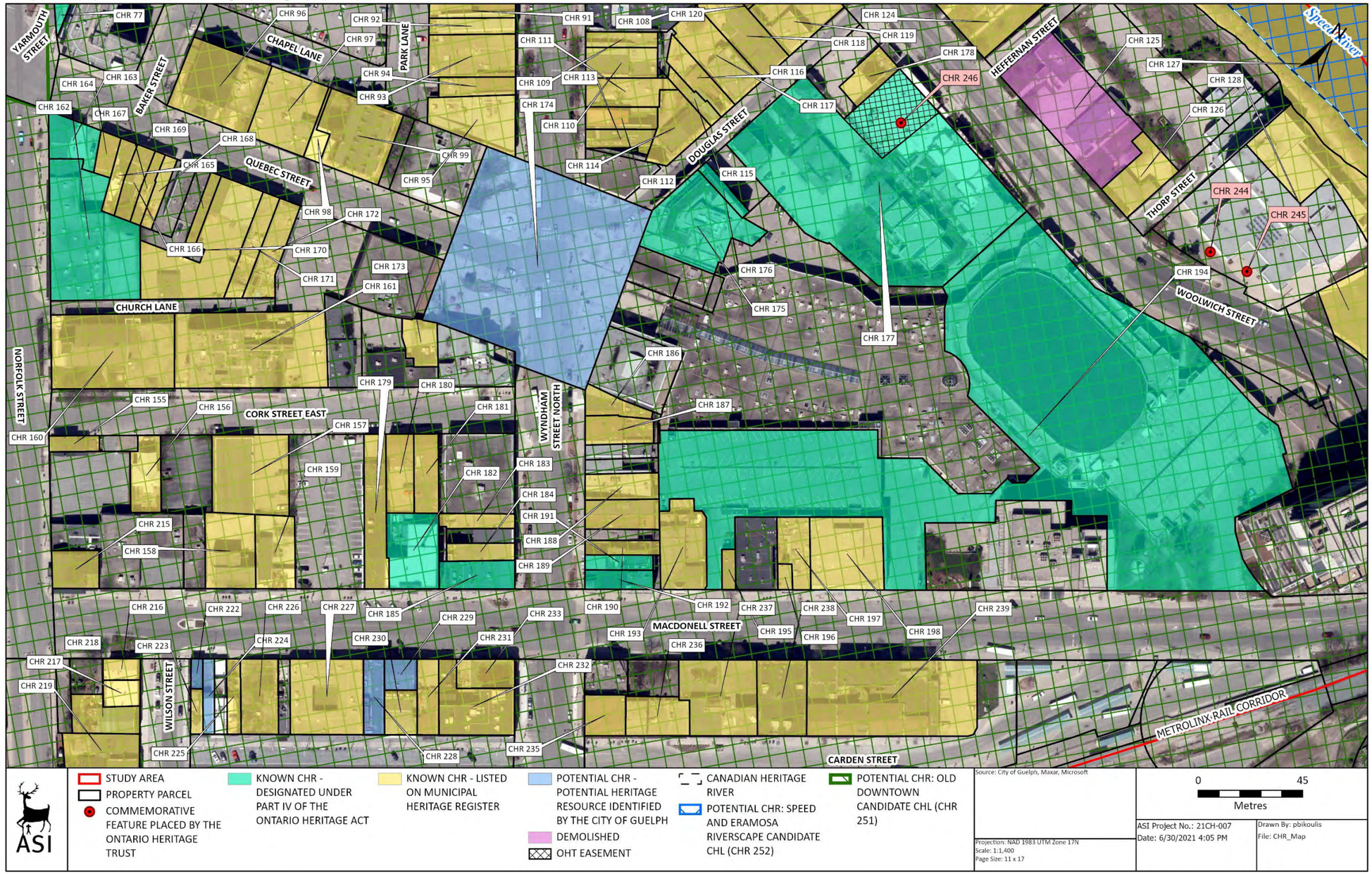

Figure 15: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 5)

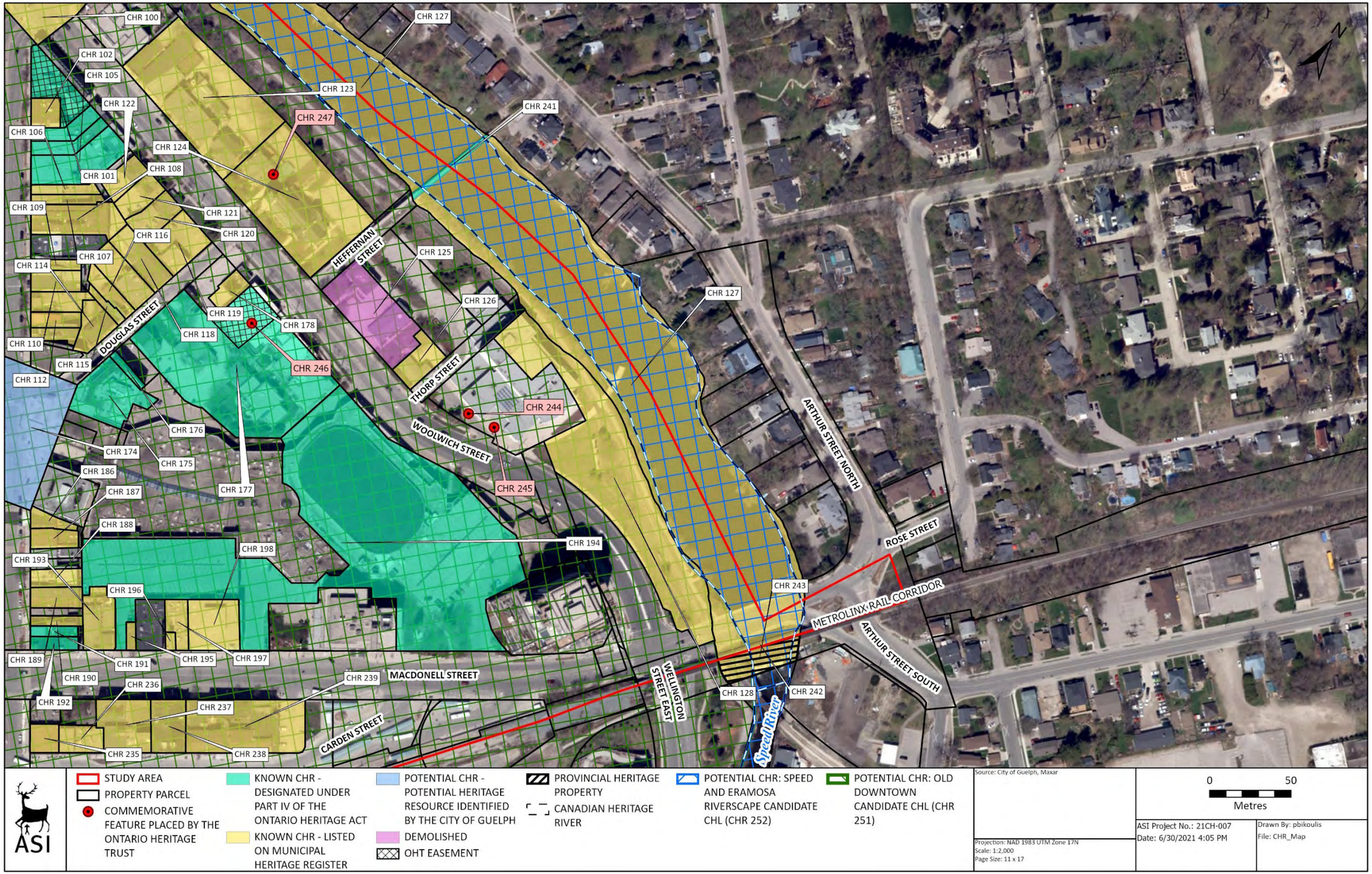

Figure 16: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 6)

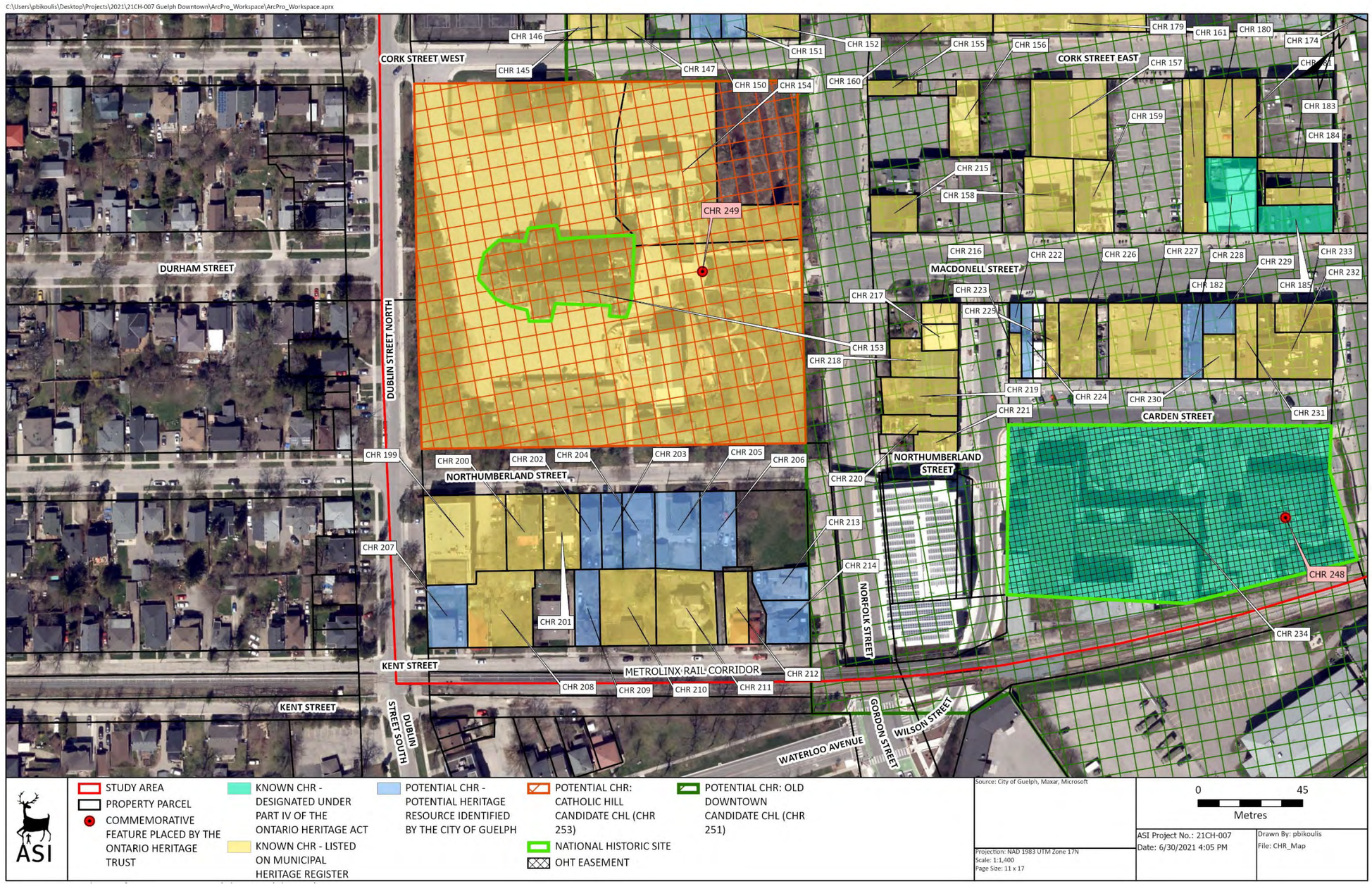

Figure 17: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 7)

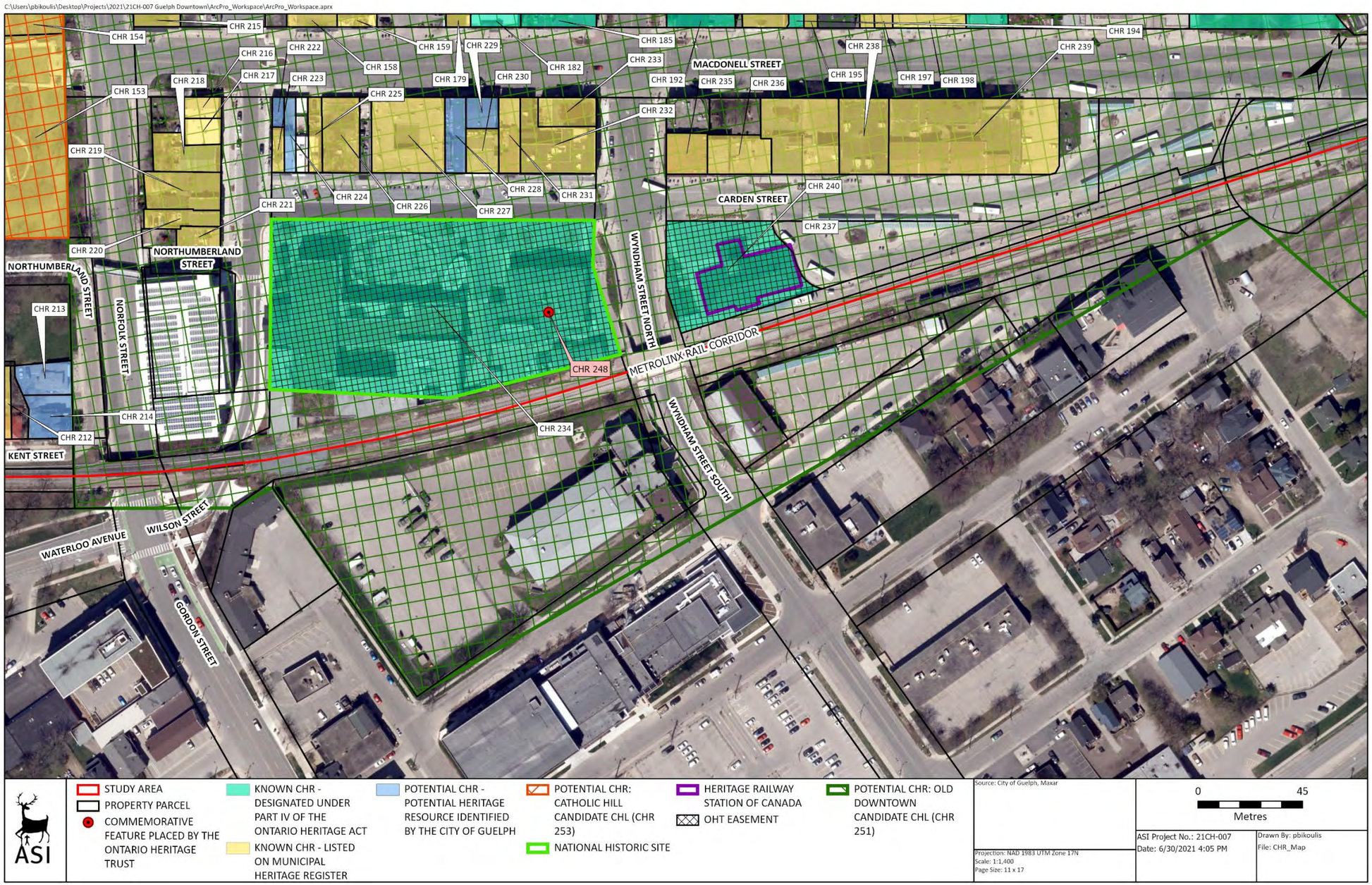

Figure 18: Location of Identified Cultural Heritage Resources in the Study Area (Sheet 8)

Figure 19: Location of Candidate CHLs identified by the City of Guelph in the Study Area

5.0 SUMMARY OF COMMUNITY DATA COLLECTION

This section will be updated once the report has been updated with a existing conditions and a preliminary impact assessment. At that time, consultation with the community will be undertaken through submission of this report, once it has been updated with existing conditions and a preliminary impact assessment, for review and comment to municipal heritage staff, the MHSTCI, and any other relevant stakeholder with an interest in this project. Consultation will also be undertaken through Public Information Centres (PICs) conducted as part of the EA project. This section will be updated following receipt of any feedback.

6.0 RESULTS AND MITIGATION RECOMMENDATIONS

The results of background historical research and a review of secondary source material, including historical mapping, indicate a study area with an urban land use history dating back to the early nineteenth century. A review of federal, provincial, and municipal registers, inventories, and databases revealed that there are 246 known or potential cultural heritage resources within the Guelph Downtown Infrastructure Revitalization Program study area.

6.1 Key Findings

- A total of 211 known CHRs and 35 potential CHRs were identified within the study area.
- Of the 246 CHRs identified within the study area, 25 are designated under Part IV of the Ontario Heritage Act and 178 are listed on the City's Municipal Heritage Register, 33 are identified as Potential Heritage Resources by the City of Guelph, three are identified as Candidate Cultural Heritage Landscapes by the City of Guelph. Seven are commemorative plaques placed by the Ontario Heritage Trust.
- Four CHRs are also subject to conservation easements by the Ontario Heritage Trust. Two CHRs are also designated National Historic Sites. One CHR is also a designated Heritage Railway Station of Canada. The Speed River is also a designated Canadian Heritage River.
- Identified cultural heritage resources are historically, architecturally, and contextually associated with land use patterns in the City of Guelph.

6.2 Conclusions

The results presented in this desktop report are preliminary and for planning and information purposes. Once the preferred design is known, field work will be undertaken. Following field review, this report will be updated to describe the existing conditions of the study area and present an inventory of known and potential CHRs, which may include additional potential CHRs identified during field review. The preliminary impact assessment will assess potential impacts of the proposed undertaking and propose appropriate mitigation measures and recommendations for minimizing and avoiding negative impacts on identified cultural heritage resources.

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APPENDIX A: DESIGNATION BY-LAWS AND DOCUMENTATION

IN THE MATTER OF THE ONTARIO HERITAGE ACT,
R.S.O. 1990, CHAPTER 0.18
AND IN THE MATTER OF THE PROPERTY KNOWN AS

1-7 DOUGLAS STREET
GUMMER BUILDING/BROWNLOW BLOCK

IN THE CITY OF GUELPH,
IN THE PROVINCE OF ONTARIO

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO: Ontario Heritage Trust
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

AND: Skyline Incorporated & Skyway Estates Inc.
c/o Jason Ashdown
70 Preston St.
Guelph, ON
N1H 3C4

TAKE NOTICE THAT the Council of The Corporation of the City of Guelph has passed By-law Number (2008–18531) to designate portions of the property known as 1-7 Douglas Street as being of cultural heritage value or interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this TWENTYNINETH day of APRIL, 2008.

Lois Giles,
City Clerk
City Hall, 59 Carden St.
Guelph, Ontario
N1H 3A1

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2008) – 18531

A by-law to designate the property municipally known as 1-7 Douglas Street and legally described as Part Lots 18 and 19, Prior's Block, Plan 8 (as in MS52001 and ROS189163) save and except Parts 4, 5 and 6, 61R3091; Part Lot 1, Plan 250, designated as Part 5, 61R2541, City of Guelph, as being a property of cultural heritage value or interest.

WHEREAS the *Ontario Heritage Act, R.S.O. 1990*, Chapter 0.18, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 1-7 Douglas Street, and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the cultural heritage value or interest of the property is set out in Schedule "A" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. Portions of the building and property known as 1-7 Douglas Street, as described in Schedule "B" to this By-law, are designated as being of cultural heritage value or interest under Part IV of the *Ontario Heritage Act, R.S.O. 1990*, Chapter 0.18.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "C" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this TWENTY-NINTH day of APRIL, 2008.

KAREN FARBRIDGE - MAYOR

LOIS A. GILES – CITY CLERK

SCHEDULE A
By-law Number (2008) –18531

STATE MENT OF CULTURAL HERITAGE VALUE OR INTEREST:

"GUMMER BUILDING/BROWNLOW BLOCK"
1-7 DOUGLAS STREET, GUELPH

The original building was constructed c. 1870 with the top floor and additions constructed in the late 1890's early 1900's. The Gummer Building/Brownlow Block is built of locally quarried limestone.

The property was first purchased by Jonas Ely from the Canada Company in 1843. William Brownlow, a carpenter owned the property in 1872 giving it its early reference name as the Brownlow Block. In 1905 Gertrude Gummer owned the building jointly with the Day family. Bertrum Gummer took on full ownership by 1912 and operated the Gummer Press, publishers of the Guelph Herald. Over the years the building has been used by barristers, insurance agents, retailers and artisans.

The façade at 1–7 Douglas Street is an excellent surviving example of 19th century stone commercial architecture. The Neo-Classic Vernacular/Italianate building has tooled stone sills, tooled lintels above the third and fourth floor windows and segmental-headed lintels above the second floor windows. There is also an impressive moulded cornice. Contextually the building plays a strategic role in the character of Douglas Street with stone buildings on both sides of the structure.

SCHEDULE B
By-law Number (2008) – 18531

DESCRIPTION OF HERITAGE ATTRIBUTES

"GUMMER BUILDING/BROWNLOW BLOCK"
1-7 DOUGLAS STREET, GUELPH

The following elements of 1-7 Douglas Street are to be protected under Part IV of the *Ontario Heritage Act, R.S.O. 1990*:

- The front and side exterior stone walls, including all original door and window openings, including sills, surrounds, and dressings; and
- Interior elements salvaged and restored including safe doors and the boiler face plate.

It is intended that non-original features may be returned to documented earlier designs or to their documented original without requiring City Council permission for an alteration to the designation.

SCHEDULE C
By-law Number (2008) – 18531

LEGAL DESCRIPTION:

"GUMMER BUILDING/BROWNLOW BLOCK"
1-7 DOUGLAS STREET, GUELPH

The property known as 1-7 Douglas Street is legally described as Part Lots 18 and 19, Prior's Block, Plan 8 (as in MS52001 and ROS189163) save and except Parts 4, 5 and 6, 61R3091; Part Lot 1, Plan 250, designated as Part 5, 61R2541; City of Guelph.

CITY OF Guelph
Making a Difference

IN THE MATTER OF THE ONTARIO HERITAGE ACT,
R.S.O. 1990, CHAPTER 0.18
AND IN THE MATTER OF THE PROPERTY KNOWN AS

9 DOUGLAS STREET

IN THE CITY OF GUELPH,
IN THE PROVINCE OF ONTARIO

RECEIVED
MAR 27 2009

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO:

Ontario Heritage Trust
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

RECEIVED
APR 07 2009
Culture Programs & Services Branch
Culture Services Unit

AND:

[redacted]
RR #1
Rockwood, ON
N0B 2K0

TAKE NOTICE THAT the Council of The Corporation of the City of Guelph has passed By-law Number (2009–18752) to designate portions of the property known as 9 Douglas Street as being of cultural heritage value or interest under Part IV, Sec. 29 of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this 26th day of March, 2009.

Lois Giles,
City Clerk
City Hall, 59 Carden St.
Guelph, Ontario
N1H 3A1

City Hall
1 Carden St
Guelph, ON
Canada
N1H 3A1

T 519-822-1260
TTY 519-826-9771

guelph.ca

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2009) - 18752

A by-law to designate the property municipally known as 9 Douglas Street and legally described as Part Lots 18 and 19, Prior's Block, Plan 8 (as described in Instrument No. CS49252) Save and Except Easements therein, City of Guelph, as being a property of cultural heritage value or interest.

WHEREAS the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18*, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 9 Douglas Street, and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the cultural heritage value or interest of the property is set out in Schedule "A" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. Portions of the building and property known as 9 Douglas Street, as described in Schedule "B" to this By-law, are designated as being of cultural heritage value or interest under Part IV, Sec. 29 of the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.*

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "C" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this TWENTY-THIRD day of MARCH, 2009.

KAREN FARBRIDGE - MAYOR

LOIS A. GILES – CITY CLERK

SCHEDULE A
By-law Number (2009) – 18752

STATEMENT OF CULTURAL HERITAGE VALUE OR INTEREST:

9 DOUGLAS STREET, GUELPH

Built in 1878, the building at 9 Douglas Street is a two-storey structure built of locally quarried limestone and pale yellow brick. Designed in the late Italianate style, the building has a low sloped shed roof, projecting architraves to semi-elliptical window heads, incised arch stones and paneled keystones, and a paneled and denticulated cornice. The building is adjoined to the north wall of the Brownlow/Gummer building.

Contextually the building, with its location along Douglas Street and its close affiliation with the Brownlow/Gummer Building and Victoria Hotel, provides important information about the commercial development of late 19th century Guelph. These buildings also encompass a key visual landscape in downtown Guelph, and help provide the old-world, 19th century charm of Douglas Street, one of the first officially recognized streets following Guelph's inception as a Town in 1856. The property is linked to two of the most prominent families in the history of Guelph, the Tovell and Mitchell families and was the site of one of Guelph's earliest and most successful undertaking businesses. The Mitchell home was located next to the undertakers shop in 1892 but was demolished in 1967 and replaced with a parking lot.

The property's significance is it's link to the late 19th Century development of the City; association with a pair of prominent families in Guelph's history, the Tovell and Mitchell families; and its contextual value in defining the charm and character of the downtown streetscape of Guelph, in particular St. George's Square and Douglas Street.

SCHEDULE B
By-law Number (2009) – 18752

DESCRIPTION OF HERITAGE ATTRIBUTES

9 DOUGLAS STREET, GUELPH

The heritage attributes that support the cultural heritage value or interest of the two storey limestone and pale yellow brick structure include:

- The exterior stone walls, including the front and rear walls, including sills, surrounds, and dressings of the front façade; and
- The architectural details of the front façade, including all original door and window openings, the windows and shopfront details, the parapet cornice and shopfront awning.

It is intended that non-original features may be returned to documented earlier designs or to their documented original without requiring City Council permission for an alteration to the designation.

SCHEDULE C
By-law Number (2009) – 18752

LEGAL DESCRIPTION:

9 DOUGLAS STREET, GUELPH

The property known as 9 Douglas Street is legally described as Part Lots 18 and 19, Prior's Block, Plan 8 (as described in Instrument No. CS49252) Save and Except Easements therein, City of Guelph.

CELEBRATING TOGETHER
1784 · ONTARIO · 1984

Guelph
ONTARIO • CANADA
CITY HALL (519) 822-1260
59 CARDEN ST. N1H 3A1

September 15th, 1983.

Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

and to:

[redacted]
159 Woolwich Street
Guelph, Ontario
N1H 3V4

Dear Sirs:

For your files, I am enclosing a certified copy of by-law number (1983)-11160, a by-law to designate the exterior and a portion of the interior of 11-13 Wyndham Street North and 66-70 Macdonell Street as items of architectural and historical significance.

Yours truly,

W. G. Hall
City Clerk

:cf

enclosure

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11160
A by-law to designate the exterior and a portion of the interior of 11-13 Wyndham Street North and 66-70 Macdonell Street as items of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 11-13 Wyndham St. North and 66-70 Macdonell Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designation has been served upon the clerk of the municipality;

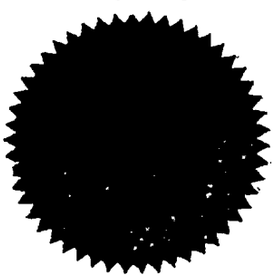
THEREFORE, The Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historic and/or architectural value and interest, portions of the commercial-residential building at 11-13 Wyndham St. North and 66-70 Macdonell St., which portions are more particularly described in Schedule "C" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this fifth day of April, 1983.

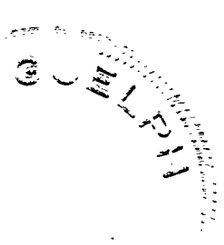


Norman Jary
MAYOR

W. Gordon Hall
CLERK

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1983)-11160 of the City of Guelph, Passed on the fifth day of April, 1983.

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this 13th day of September, 1983.



W. Gordon Hall
Clerk

SCHEDULE "A"

BY-LAW NO. (1983)-11160

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario and being composed of part of Lot Number Fourteen (14) in the Canada Company Survey, Plan 8, of the said City of Guelph, which said parcel may be more particularly described as follows:-

COMMENCING at the Southerly angle of said Lot 14;

THENCE North 56 degrees 05' 40" East along the Southeasterly limit of said Lot 14 being also along the Northwesterly limit of Macdonell Street, a distance of ninety-six feet eight inches to a point;

THENCE North 34 degrees 09' 10" West, a distance of twenty-nine feet seven inches (29' 7") to a point.

THENCE South 56 degrees 05' 40" West in a straight line parallel to Macdonell Street, a distance of ninety-six feet eight inches more or less to the Southwesterly limit of said Lot 14 being also the Northeasterly limit of Wyndham Street;

THENCE South 34 degrees 10' East along the Southwesterly limit of said Lot 14 being also the Northeasterly limit of Wyndham Street a distance of twenty-nine feet seven inches (29'7") more or less to the place of beginning.

SCHEDULE "B"

BY-LAW NO. (1983)-11160

STATEMENT OF REASONS FOR DESIGNATION

PETRIE-KELLY BUILDING (11 - 13 Wyndham St. North and 66 - 70 Macdonell St.)

The Petrie-Kelly Building dominates the Wyndham-Macdonell intersection with its high corner tower and ornate mansard roof. It is a major architectural landmark and focal point in the Central Business District and is unique among late-19th Century business structures in Ontario.

The design is attributed to Guelph architect John Day. It was built in 1882 - 83 on the site of the old Great Western Hotel and was jointly financed by W. H. Cutten, barrister and A. B. Petrie, pharmacist. Walter Grierson was the masonry contractor.

Although a few ornamental details, such as cast-iron roof cresting, have been removed, the building survives in remarkably good structural condition. Originally, the third floors of both the Petrie-Kelly Building and 15 Wyndham, to the north, provided meeting space for the I.O.O.F. Lodge. The high, decorative, plaster ceiling of the I.O.O.F. meeting hall remains above false ceilings on the third floor of the Petrie-Kelly Building and has potential for exposure and restoration. The ground floor commercial spaces housed various banks, businesses and ticket offices, including, from 1935 to 1976, the C. W. Kelly Music Store. Prior to being converted to apartments in 1921, the second floor provided office space.

The designation covers the street facades plus the ornate, slate-faced mansard roof. Also included is the plaster ceiling of the former 3rd floor I.O.O.F. hall.

SCHEDULE "C"

BY-LAW NO. (1983)-11160

ELEMENTS OF PROPERTY BEING DESIGNATED

1. The two limestone street facades of the building, including window pattern, size and type.

2. The ground floor facade and structure,under the present surface treatment.

3. The slate-faced mansard roof with its decorative dormers, windows and corner tower.

4. The domed plaster ceiling of the former I.O.O.F. meeting hall, located above false ceilings at the third floor at the time of the passing of this by-law.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11160

A by-law to designate the exterior and a portion of the interior of 11-13 Wyndham Street North and 66-70 Macdonell Street as items of architectural and historical significance.

Read a first and second time at 10:18 o'clock p.m., April 5, 1983.

Read and passed in Committee at 10:19 o'clock p.m., April 5, 1983.

Read a third time and passed at 10:21 o'clock p.m., April 5, 1983.

March 26th, 1980.

Toronto-Dominion Realty Company
Ontario South-West Division
Post Office Box 1,
Toronto-Dominion Centre
Toronto, Ontario
M5K 1A2

Dear Sirs:

Re: Designation of Toronto-Dominion Bank, 12 Wyndham St. N., Guelph under the Ontario Heritage Act.

For your files I am enclosing a certified copy of by-law number (1979)-10190, a by-law to designate the facade of the above referenced bank as an item of architectural and historical importance.

You will note from the cover page the by-law was registered on March 19th, 1980 as Instrument No 227912.

Yours truly,

W. G. Hall,
City Clerk.

WGH:ng
Encl.
c.c.
Toronto-Dominion Bank,
Ontario Heritage Foundation.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1979) - 10190

A by-law to designate the facade of the Toronto-Dominion Bank at 12 Wyndham Street North as an item of Architectural and Historical Importance.

WHEREAS the Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owner of the lands and premises known as the Toronto-Dominion Bank, at 12 Wyndham Street North, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designation has been served upon the Clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. There is designated as being of historical and architectural value and interest the complete facade and cornice of the three-storey section of the Toronto-Dominion Bank building, at 12 Wyndham Street North, facing both Wyndham Street and Macdonell Street.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" hereto, being Part of Lot 108, Canada Company Survey, 12 Wyndham Street North, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this first day of October, 1979.

MAYOR

CLERK

SCHEDULE "A"

A-25 Guelph
(Wyndham and McDonnell Streets)

ALL AND SINGULAR that certain parcel or tract of land and premises, situate, lying and being in the City of Guelph, in the County of Wellington and in the Province of Ontario being composed of the part of Lot Number 108, of the Canada Company's Survey of the Town of Guelph, containing an area of Nine one-hundredths (.09) of an acre, more or less, and which said parcel or tract of land and premises may be more particularly described as follows:

COMMENCING at the point where the northerly limit of McDonnell Street is intersected by the westerly limit of Wyndham Street;

THENCE north 34 degrees, 18 minutes West along the said westerly limit of Wyndham Street, Forty-one feet (41') to the Centre of a Party Wall in a Stone Building;

THENCE south 55 degrees, 50 minutes West, along the Centre line of said Party Wall and westerly one hundred and six and six-tenths feet (106.6') more or less to the westerly limit of the said Lot Number 108;

THENCE south 34 degrees, 18 minutes East, along the said westerly limit of Lot 108, thirty-nine and five-tenths feet (39.5') feet, more or less to the said northerly limit of McDonnell Street;

THENCE north 55 degrees, 50 minutes East, along the said northerly limit of McDonnell Street, one hundred and six and six-tenths feet (106.6') more or less to the place of beginning, the said lands being shown bordered red on the [illegible] Instrument Number [illegible].

SUBJECT TO a Right of Way over a portion of the above described lands, consisting of a piece of land ten feet (10') wide, immediately adjoining the westerly limit of the above described lands, on the westerly side of said limit, and running from McDonnell Street to the northerly limit of said lands.

AND TOGETHER with a Right of Way ten feet (10') wide, extending along the westerly limit of said Lot 108 and on the westerly side thereof for a distance of sixty-six feet (66') from the northerly limit of the above described Right of Way, to be used in common with the owners of the adjoining lands.

SCHEDULE "B"

By-law Number (1979) - 10190

Statement of Reasons for the Proposed Designation

The Toronto-Dominion Bank, 12 Wyndham Street North, was built for Nathaniel Higinbotham to house his apothecary. Known as "Medical Hall", it was completed in April 1859. It was constructed of warm-hued local limestone laid in neat courses of dressed ashlar masonry. It forms the southern anchor for the unified stone block face from Macdonell Street to Cork Street.

Windows on the second and third floors are framed with triangular, pedimented lintels with carved stone brackets supported on plain architraves. Carved stone brackets support the window sills and distinctive carved stone cornice. The angular corner is accented with a curved surface, echoed by the curved cornice.

The property has been a bank since its purchase from the Higinbotham family in 1919. Alterations were made to the ground floor in 1939 and 1962. In 1976-77, Toronto-Dominion restored and cleaned the original masonry, replaced the original window sash and rebuilt the interior. The quality of the restoration work was recognized by the Guelph Arts Council's 1978 Bronze Plaque of Merit. The retention of this structure has provided a strong example of the potential for restora tion of the historic architecture of downtown Guelph.

Only the facade and cornice of the three-storey walls facing Macdonell Street and Wyndham Street are included in this designation. The two-storey wall facing Macdonell Street and the total interior space are excluded.

City of Guelph

CITY HALL, 59 Carden Street
Guelph, Ontario, Canada N1H 3A1

OFFICE OF CITY CLERK

Telephone (519) 837-5603

February 7th, 1985.

Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

Dear Sir:

For your files, I am enclosing a certified copy of by-law number (1980)-10467, a by-law to designate the exterior of the County Solicitor's Building at 15 Douglas Street, as a building of architectural and historical significance.

You will note from the cover page, the by-law was registered on February 1st, 1985 as Instrument Number 394091.

Yours truly,

W. G. Hall
City Clerk

:ckf

enclosure

c.c.
Mr. J. C. Andrews
County Clerk
County of Wellington
74 Woolwich Street
Guelph, N1H 3T9

Mr. N. Harrison
Guelph Planning Dept.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1980)-10467
A by-law to designate the exterior of the County Solicitor's Building at 15 Douglas Street, as a building of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1974, authorized the Council of a municipality to enact by-laws to designate real property, including all of the buildings, structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of The Corporation of the City of Guelph has caused to be served upon the owner of the lands and premises known as 15 Douglas Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule 'B' hereto; and

WHEREAS no notice of objection to the said proposed designation has been served upon the Clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. There is designated as being of historical and architectural value and interest, the exterior of the County Solicitor's Office at 15 Douglas Street, to the extent described in Schedule 'C' hereto.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule 'A' hereto, being Lot 17, Prior's Block, Canada Company Survey, Registered Plan 8, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this fifteenth day of September, 1980.

Norman Jary
Mayor

W. G. Hall
Clerk

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1980)-10467 of the City of Guelph, Passed on the fifteenth day of September, 1980.

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this fifth day of February, 1985.

W. G. Hall
Clerk

SCHEDULE "A"

TO BY-LAW (1980)-10467

15 Douglas Street

All and singular that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and being composed of Lot 17, Prior's Block, Canada Company Survey, Registered Plan 8, City of Guelph.

SCHEDULE "B"

By-law Number (1980)-10467

STATEMENT OF REASONS FOR DESIGNATION

15 DOUGLAS STREET (County Solicitor's Building)

This structure has survived with relatively few alterations, inside or out, since it was built in 1865-66. It may be considered to be the most architecturally significant of the County's buildings. Constructed of local limestone, the two-storey building has a distinctive facade in which quarry-faced blocks framing windows, doors and corner angles contrast with a background of smooth-faced masonry.

The ground floor was originally occupied by Hon. Adam Fergusson-Blair, County Solicitor, and the successors of that firm and its partners have continuously utilized the same space since 1865. The building has been a unique focus for the legal profession in this city. For many years, the second floor served as offices for the local Master of the Supreme Court and the Crown Attorney.

SCHEDULE "C"

ELEMENTS OF BUILDING TO BE DESIGNATED

It is the intention of this by-law to designate, as architecturally and historically significant, only the exterior of the building at 15 Douglas Street. This would include:

a) the stone walls, with special emphasis on the Douglas Street facade

b) the present form of roof or duplication of the earlier original roof

c) the location and type of windows and doors.

Although much of the interior is old and interesting, interior details have not been include in this designation.

394091

No.
Land Registry Division of Wellington South (No. 61)
I CERTIFY that this instrument is registered as of
in the
'85 FEB 1 PM 3:27
Land
Registry Office
at Guelph
Ontario.

Land Registrar

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1980) - 10467

A by-law to designate the exterior of the County Solicitor's Building at 15 Douglas Street, as a building of architectural and historical significance.

Read a first and second time at
7:33 o'clock p.m., September 15, 1980.

Read and passed in Committee at
7:37 o'clock p.m., September 15, 1980.

Read a third time and passed at
7:38 o'clock p.m., September 15, 1980.

16

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1990)-13553

A by-law to designate the Petrie Building at 15 Wyndham Street N. as an item of architectural and historical significance.

The Council of The Corporation of the City of Guelph, **ENACTS AS FOLLOWS:**

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as the Petrie Building, 15 Wyndham Street, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of architectural and historical value and interest under Part IV of The Ontario Heritage Act, R.S.O. Chapter 337, the entire exterior of the Petrie Building to the extent more particularly described in Schedule "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED on this Twenty second day of May, 1990.

MAYOR

CLERK

I hereoy certify the above copy to be a true copy of

By-law Number (1990)-13553

of the City of Guelph.

IN TESTIMONY WHEREOF are hereunto set the seal of The Corporation of the City of Guelph and the hand of the City Clerk of the said Corporation this 29th day of May, 1990

City Clerk

SCHEDULE "A"

BY-LAW NUMBER (1990)-13553

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of WEllington and being composed of Part of Lot Number Fourteen (14) in the Canada Company's Survey and more particularly described as follows:

COMMENCING on Wyndham Street at the centre of the party wall running parallel to MacDonell Street and situate Fifty-one (51) feet more or less Northerly from MacDonell Street;

THENCE Easterly in a course parallel to MacDonell Street Ninety-six (96) feet Eight (8) inches to a lane;

THENCE Southerly Twenty-two (22) feet more or less to the centre of a party wall;

THENCE Westerly through the centre of the last mentioned party wall Ninety-six (96) feet Eight (8) inches more or less to Wyndham Street;

THENCE Northerly along Wyndham Street Twenty-two (22) feet more or less to the place of beginning.

TOGETHER WITH the use in common with others who have the same privilege of a land Ten (10) feet in width leading from the back of the said premises to Quebec and MacDonell Streets.

As described in instrument number 215001.

SCHEDULE "B"

BY-LAW NUMBER (1990)-13553

STATEMENT OF REASONS FOR DESIGNATION

THE PETRIE BUILDING

This unique building, designed by Guelph architect John Day, was completed in 1882 for Alexander Bain Petrie, a local pharmacist and manufacturer and one of the City's most successful and influential businessmen. Four storeys high and constructed of stone and timber, it is one of a very few buildings remaining in Canada incorporating a stamped galvanized iron facade. It was manufactured for Petrie by the Ohio firm of Bakewell and Mullins, specialists in architectural sheet metal working. Stylishly ornamented and elaborately embellished, the facade is distinguished by a bold cornice with a broken pediment enframing a large mortar and pestle.

A building recognized nationally for its architectural significance, this local landmark also represents a prosperous era in the City's commercial growth. The designation applies to the entire exterior of the original building.

SCHEDULE "C"

BY-LAW NUMBER (1990)-13553

ELEMENTS OF PROPERTY AND BUILDING BEING DESIGNATED

The complete exterior of the original building including the entire original stamped galvanized iron street facade, the shape and form of the building and its roof and all exterior building details and embellishments.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1990)- 13553

A by-law to designate the Petrie Building, 15 Wyndham Street North as an item of architectural and historical significance.

Read a first and second time at 10:08 o'clock p.m., May 22nd, 1990.

Read and passed in Committee at 10:09 o'clock p.m., May 22nd, 1990.

Read a third time and passed at 10:10 o'clock p.m., May 22nd, 1990.

CELEBRATING TOGETHER
1784 · ONTARIO · 1984

Guelph
ONTARIO • CANADA
CITY HALL (519) 822-1260
59 CARDEN ST. N1H 3A1

September 25th, 1984.

Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

and to

Hernold Investments Ltd.
115 Shuh Avenue
Kitchener, Ontario
N2A 1H4

Dear Sir:

As required by Section 29(6), I enclose a certified copy of by-law number (1984)-11595, a by-law to designate portions of the exterior of the building at 52 Macdonell Street as being of architectural and historical significance.

Yours truly,

W. G. Hall
City Clerk

:ckf

enclosure

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1984)- 11595.

A by-law to designate portions of the exterior of the building at 52 Macdonell Street as being of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest;and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as The Regent Hotel, 52 Macdonell Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the Clerk of the municipality;

THEREFORE, The Council of the Corporation of the City of Guelph enacts as follows:

1. There is designated as being of historic and architectural value and interest the portions of the exterior of the building at 52 Macdonell Street which is more particularly described in Schedule "C" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this 4th day of September, 1984.

Norman Jary
.....
Mayor.

W. G. Hall
.....
Clerk.

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1984)-
11595 .....of the City of Guelph, Passed on the fourth .....day of

September ....., 19 84 .....,

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this

fifth .....day of September ....., 19 84

W. G. Hall
.....
Clerk

SCHEDULE "A"

TO BY-LAW NO. (1984)-11595

ALL AND SINGULAR that certain parcel of tract of land and premises situate lying and being in the City of Guelph, in the County of Wellington, and Province of Ontario, being composed of part of Lot Number One Hundred and Nine (109) according to the Canada Company's Survey of the Town, now City of Guelph, containing an area of One Hundred and Seventy-Nine One Thousandths (0.179) of an acre, more or less, and which said parcel or tract of land and premises is more particularly described as follows:

COMMENCING at a point in the Southeasterly limit of the said Lot distant Thirty-Four feet and Sixty-Five One-Hundredths of a foot (34.65) measured therealong on a bearing of North 56 degrees 14 minutes East from the Southerly angle of the said lot, the said point of commencement being at the intersection of the Southeasterly limit of said lot with the centre line of a wall between the building used as the Regent Hotel and and the building formerly used and known as the Regent Theatre and being also the most Easterly angle of lands conveyed to Joseph Wolfond by Registered Instrument Number 45459, Book C.54, for the said City;

THENCE North 33 degrees 21 minutes West along the centre line of said wall, and which said wall was made a party wall in the description contained in said Registered Instrument No. 45459, forty-three feet and eighty-five one-hundredths of a foot (43.85);

THENCE South 56 degrees 14 minutes West along the centre line of a wall also made a party wall in the description contained in said Registered Instrument Number 45459, three feet and twenty-seven One-Hundredths of a foot (3.27) to the centre line of the Northeasterly wall of the said building formerly used as the Regent Theatre;

THENCE North 33 degrees 56 minutes west along the said last mentioned centre line of wall, also made a party wall in the description contained in said Registered Instrument Number 45459, sixty-three feet and sixty-five One-Hundredths of a foot (63.65) more or less, to the Northwesterly limit of said Lot Number 109; the immediately preceding three (3) courses and distances all being along the Northeasterly limit of lands conveyed to Joseph Wolfond by said Registered Instrument Number 45459;

...../2

THENCE North 57 degrees 21 minutes East along the said last mentioned limit seventy-four feet and fifty-four One-Hundredths of a foot (74.54) more or less, to the Northerly angle of said Lot Number 109;

THENCE South 33 degrees 56 minutes east along the Northeasterly limit of said Lot Number 109, one-hundred and five feet and nine-tenths of a foot (105.9) to the Easterly angle thereof;

THENCE South 56 degrees 14 minutes West along the Southeasterly limit of said Lot Number 109, being also along the Northwesterly limit of Macdonnell Street, seventy-one feet and seven-tenths of a foot (71.7) to the point of commencement.

SCHEDULE "B"

By-law Number (1984)- 11595

STATEMENT OF REASONS FOR DESIGNATION

REGENT HOTEL

Built of local limestone in 1883 as the Commercial Hotel on site of earlier frame Bay Horse (Reinhart's) Hotel. Designed by John Day for John Hogg, it was operated by Christian Reinhart. A serious fire in 1887 caused reconstruction for Reinhart and Timothy O'Connor, then owners. Owned by Reinhart family until mid-30's, then La Fontaine family until late 1960's. The facade was refurbished in 1975 and the first floor received a new exterior treatment in 1979.

Features steep mansardic roof, around a central fourth-storey pavilion, clad in original patterned slate and topped by cast-iron filigree cresting. Facade has dressed stone around windows and doors and dressed corner quoins, with contrasting random pattern elsewhere. It is prominent in framing the Macdonell Street views.

SCHEDULE "C"

By-law Number (1984)-

ELEMENTS OF BUILDING DESIGNATED BY THIS BY-LAW

Included in the designation is the street facade, the mansard, the complete east wall (facing lane) and the exposed portion of the west wall (above roof of No. 44-46). The infill design between original first floor stone structural elements is not designated.

THE CORPORATION OF THE CITY OF

GUELPH

By-law Number (1984)-11595.

A by-law to designate portions of the exterior of the building at 52 Macdonell Street as being of architectural and historical significance.

Read a first and second time at 8:15 o'clock p.m., September 4, 1984.

Read and passed in Committee at 8:16 o'clock p.m., September 4, 1984.

Read a third time and passed at 8:17 o'clock p.m., September 4, 1984.

FILE COPY

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1978)-9820

A by-law to designate portions of Guelph City Hall and its Annex at 59 Carden Street as buildings of Architectural and Historic Importance.

WHEREAS The Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon or portions thereof, to be of historic or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owner of the lands and premises known as Guelph City Hall and City Hall Annex at 59 Carden Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "C" hereto; and

WHEREAS no notice of objection to the said proposed designation has been served upon the clerk of the municipality;

THEREFORE the Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historic and architectural value and interest, specific portions of the exterior of City Hall and the City Hall Annex, which are more specifically described in Schedule "B" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" hereto, being Part of MarketSquare, Canada Company Survey, 59 Carden Street, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this 24th day of July, 1978.

Norman Jary
MAYOR

CLERK

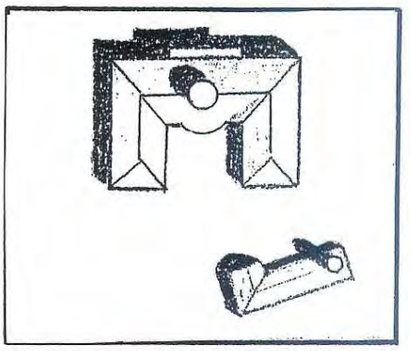
SCHEDULE 'A'

All and singular that certain parcel or tract of land, situate, lying and being in the City of Guelph in the County of Wellington being composed of that Part of Market Place, Canada Company Survey, Registered Plan 8 being bounded on the north by Carden Street, on the east by Wyndham Street, on the south by the Canadian National Railway and on the west by Wilson Street.

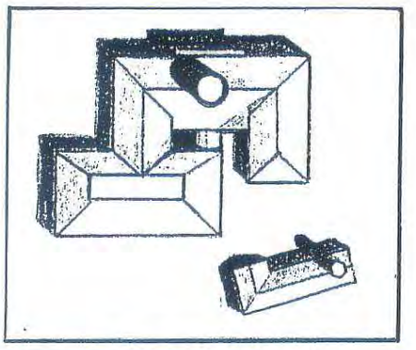
SCHEDULE "A"

HISTORICAL NOTES

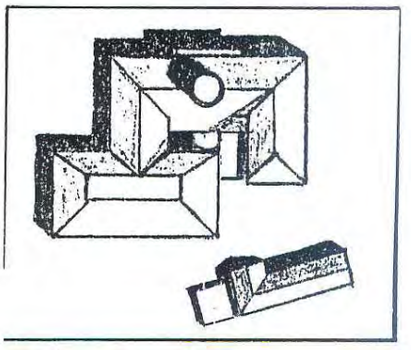
GROWTH OF CITY HALL



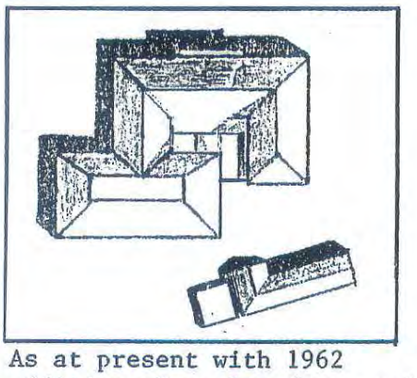
As originally built 1856-1857
(Annex built about 1865 as Fire Hall)



With Town Hall addition made 1875 (Larger cupola added 1869)



With addition of cell block (area now occupied by print-room) early in 20th century and addition to annex for ambulances (circa World War II)



As at present with 1962 addition of vaults (now used by City Clerk and Engineering Dept.) and 1966 addition of Mayor's Office. Cupola removed (1961)

NOTES ON THE HISTORY OF THE CITY HALL AND ANNEX

Architect for 1856 building - Wm. Thomas, architect of St. James Cathedral and St. Lawrence Hall and Market, Toronto

Contractors in 1856 -- Masonry - Morrison and Emslie, Guelph
Carpentry - Geo. Netting, Toronto
Carving - Matthew Bell, Guelph

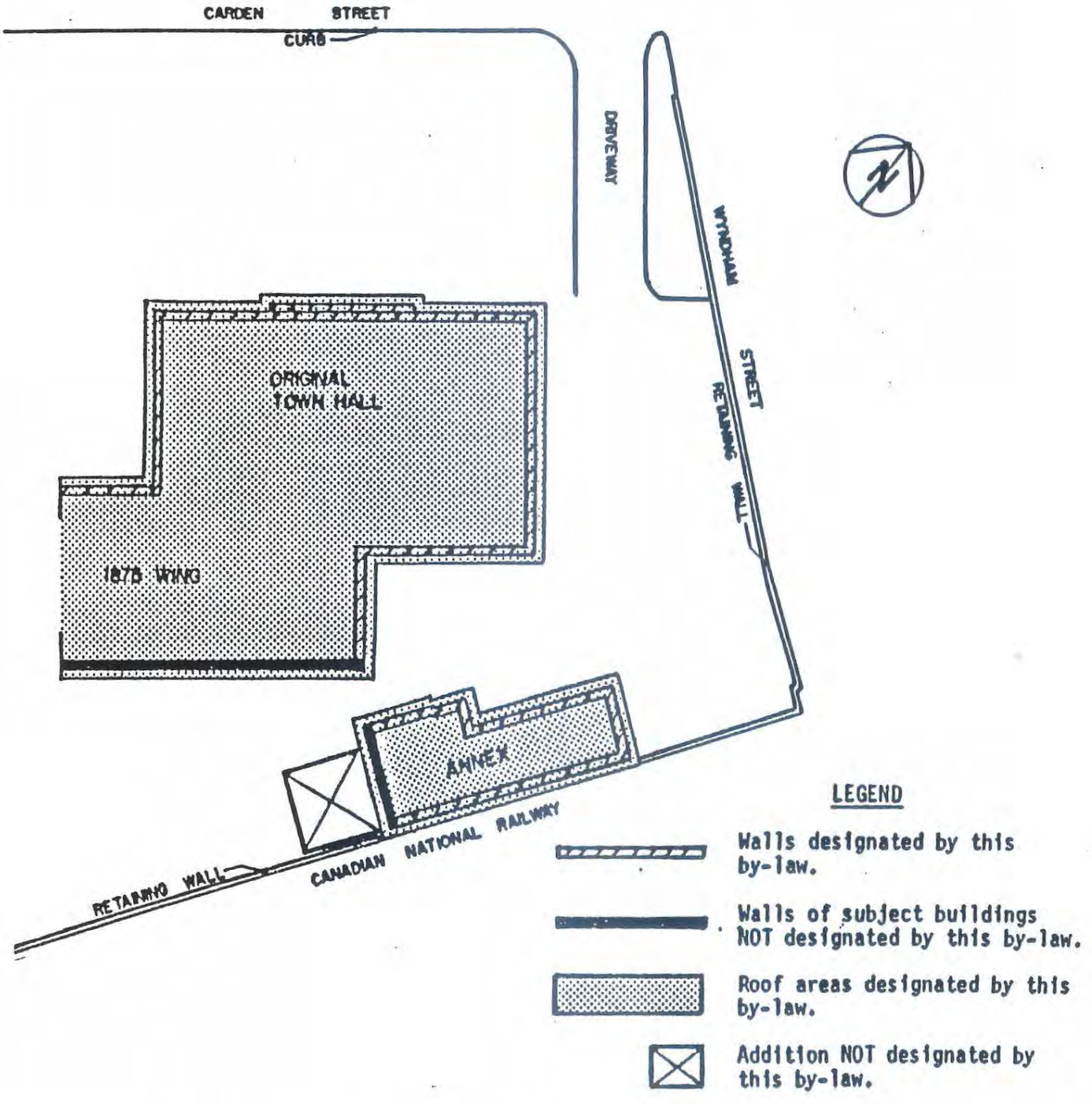
Material -- Guelph limestone

Original Use -- City Hall and Market (Building pair has, through the years, housed the Fire Department, Police Department, Civic Auditorium, Health Authorities, Assessment Offices, Courts, Ambulance storage, a variety of markets and regular municipal departments).

SCHEDULE "B"

ELEMENTS TO BE DESIGNATED

All exterior walls, windows and roofs of the City Hall and the City Hall Annex, with the exception of those portions specified in the drawing below, being the south-east wall of the 1875 wing of the City Hall, the two-storey stone wall at the south-west end of the City Hall Annex and the one-storey addition at the south-west end of the City Hall Annex.



Note: Heritage Conservation Easement between the City

City of Guelph

CITY HALL, 59 Carden Street
Guelph, Ontario, Canada N1H 3A1

OFFICE OF CITY CLERK

Telephone (519) 837-5603

February 7th, 1985.

Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

Dear Sir:

For your files, I am enclosing a certified copy of by-law number (1983)-11332, a by-law to designate the Former Wellington County Jail and Governor's Residence at 74 Woolwich Street, The Residence at 258 Woolwich Street and the Goldie Mill Ruins and Property on Cardigan Street as items of architectural and historical significance.

You will note from the cover page, the by-law was registered on February 1, 1985, as Instrument Number 394092.

Yours truly,

W. G. Hall
City Clerk

:ckf

enclosure

c.c.
Mr. J. C. Andrews
County Clerk
County of Wellington
74 Woolwich Street
Guelph, N1H 3T9

Mr. N. Harrison
Guelph Planning Dept.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11332
A by-law to designate portions of the buildings and properties at 74 Woolwich Street (Former Wellington County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street as items of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 74 Woolwich Street (Former County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real properties and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. Portions of the buildings at 74 Woolwich Street, Guelph, known as the former Wellington County Jail and Governor's Residence; portions of the building at 258 Woolwich Street; and the masonry construction of the former Goldie Mill which survives after the 1983 stabilization project, the ninety-foot brick chimney, as well as the surrounding property owned by the Grand River Conservation Authority and known as the Former Goldie Mill lands on Cardigan Street which are more particularly described in Schedule "C" to this by-law, are hereby designated as being of historic or architectural value or interest.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the properties described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this seventh day of November, 1983.

.....
Mayor

.....
Clerk

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1983)-11332 of the City of Guelph, Passed on the seventh day of November, 1983.

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this fifth day of February, 1985.

.....
Clerk

SCHEDULE "A"

TO BY-LAW (1983) - 11332

74 WOOLWICH STREET

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, and Province of Ontario, and being composed of Lots 10, 11, 12, and 13, Prior's Block, Registered Plan Number 8, City of Guelph.

258 WOOLWICH STREET

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, and Province of Ontario, and being composed of part of Lot No. 42 in Hubbard's Survey according to Registered Plan No. 35 which may be better known and described as follows, that is to say:

COMMENCING at the Easterly angle of said Lot cornering on Woolwich and Charles Streets;

THENCE North 34 degrees, 10 minutes West along Woolwich Street 40.59 feet;

THENCE South 55 degrees, 50 minutes West 88.22 feet;

THENCE South 34 degrees, 10 minutes East 40.59 feet more or less to Charles Street;

THENCE North 55 degrees, 50 minutes East 88.22 feet more or less along Charles Street to the place of beginning.

GOLDIE MILL RUINS AND PROPERTY

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario; being composed of Part of the Mill Lands on Cardigan Street and part of the original bed of the River Speed, in the Canada Company's Survey of the Town, now City of Guelph, and which may be also known as part of the Saw Mill Lot in Divisions "A" and "F" and described as follows:-

PREMISING that the line of London Road has a bearing of North 45 degrees East, and relating all bearings contained herein thereto;

COMMENCING at the end of the following courses and distances:-

BEGINNING at the point where the Easterly limit of Cardigan Street would be intersected by the production Northeasterly of the Northwesterly limit of London Road;

THENCE South 29 degrees 08 minutes East, along the production of the said Easterly limit of Cardigan Street, 20.2 feet to its intersection with the existing fence between the Mill Lands and the lands used for the right-of-way of the Guelph and Goderich Railway and the Canadian National Railway;

THENCE South 49 degrees 57 minutes East, along the said fence, 171.08 feet to the Southerly angle of lands expropriated by the City of Guelph by By-law (1964)-5729, Registered Instrument M-40697;

THENCE North 56 degrees 31 minutes East, along the Southeasterly limit of lands conveyed by Registered Instrument M-40697 aforesaid, 161.65 feet to an iron pipe marking the point of commencement and the Westerly angle of the lands intended to be conveyed hereby and which may be also marked as Point "A";

THENCE South 33 degrees 29 minutes East, 456.30 feet more or less to an iron pipe on the Northeasterly limit of lands of the Guelph and Goderich Railway as described in Registered Instrument 7943;

THENCE South 52 degrees 32 minutes East, along the last mentioned limit, 2.90 feet to an iron pipe marking a bend therein;

THENCE South 58 degrees 48 minutes East, continuing along the above mentioned limit, 90.41 feet more or less to an iron pipe marking its intersection with the Northwesterly limit of Norwich Street;

THENCE North 54 degrees 13 minutes East, along the said limit of Norwich Street, 12.90 feet more or less to an iron bar marking the Southerly angle of lands conveyed to Oscar Strome by Registered Instrument 40826 Book C49 and which may be marked as Point "B";

THENCE North 48 degrees 11 minutes West, along the Southwesterly limit of lands conveyed by Registered Instrument 40826 aforesaid, 60 feet to an iron bar;

THENCE North 40 degrees 30 minutes West, continuing along the above mentioned limit, 62 feet to an iron bar;

THENCE North 34 degrees 48 minutes West, 132.80 feet to a point in the Northwesterly limit of lands presently owned by Oscar Strome;

THENCE North 56 degrees 19 minutes East along the aforesaid limit of Strome's lands being also the Southeasterly limit of lands described in Registered Instrument 66454, Book C87, a distance of 36.50 feet to a point;

THENCE continuing along the last mentioned limits North 46 degrees 07 minutes East, 31.90 feet to a point;

THENCE North 54 degrees 13 minutes East, 5.5 feet more or less to an iron bar;

THENCE continuing North 54 degrees 13 minutes East 30 feet more or less to the Southwesterly high water mark of the Speed River as it exists in January 1970;

THENCE in a general Northwesterly direction on various courses and distances following the high water mark to the Southeasterly angle of lands expropriated by City of Guelph By-law No. 5729 -(1964), Registered Instrument M-40697;

THENCE South 56 degrees 31 minutes West, along the Southeasterly limit of lands conveyed by Registered Instrument M-40697 aforesaid, 119.5 feet more or less to the point of commencement;

SCHEDULE "B"

BY-LAW NUMBER (1983)-11332

STATEMENTS OF REASONS FOR DESIGNATION

FORMER COUNTY JAIL AND GOVERNOR'S RESIDENCE 74 WOOLWICH STREET

The exterior restoration of the jail and Governor's Residence, built in 1911 by the County of Wellington and the City of Guelph, and the adaptation of the interiors to new use will complete the rehabilitation of the County's complex of buildings, begun in 1980, and will balance its composition. G.A. Scroggie, Contractor, constructed the buildings in 1911 to plans by W.A. Mahoney, Architect. Much of the stone used was salvaged from the original octagonal jail of 1839, the first permanent public building in town. It had been designed by Toronto Architect Thomas Young and built by William Day. A segment of the stone-walled exercise yard of 1839 survives intact in the south-west corner of the 1911 building.

GOLDIE MILL RUINS AND PROPERTY

The former Goldie Mill site is one of the most historic manufacturing locations in the City. In 1827 David Gilkison, cousin of John Galt, built a saw mill here beside the Speed River. Doctors W. Clarke and H. Orton built the "Wellington Mills" in 1845. After a fire, the mills were rebuilt in stone in 1850 and renamed the "People's Mills". They burned again in 1864 and James Goldie purchased the property in 1866, extensively enlarging the stone buildings in 1867. The flour mills continued to expand under the direction of the Goldie family until sold in 1918. The mill operated until a spring flood in 1929 carried away the dam. Most of the structure was unused since a serious fire in 1953. In the 19th Century, the manufacturing complex included a foundry, a sawmill, cooperage, distillery, piggery and tannery. Its growth contributed significantly to the growth and prosperity of Guelph.

Among the unique architectural features of the masonry construction of the thick stone walls were the double-reinforced stone lintels, an unusual type of construction in Ontario. The most impressive remaining section of the structure was built in 1867 with quarry-faced limestone. All stone was quarried on the mill property.

The designation covers all masonry construction which survives after the 1983 stabilization project, the ninety-foot brick chimney as well as the surrounding property as purchased by Grand River Conservation Authority in March 1976.

258 WOOLWICH STREET

This two-storey stone dwelling was built for Samuel Hodgskin, Accountant, in 1871-72 on Lot 42 of Hubbard's Survey, (R.P. 35). The brick addition at the rear is believed to have been added by Hodgskin about 1877. This is one of a series of three fine stone houses of varied styles which form a unified grouping, unequalled elsewhere in Guelph, between Charles Street and Edwin Street.

With a bracketed facade gable, this tasteful masonry house is characteristic of a building style used in homes of modest pretentions during the 1870's. In its 112 years, it has had a

variety of owners and tenants. It was converted to four apartments in the 1940's but extensive restoration work was carried out in early 1981 by the present owners, Illusion Designed Interiors, resulting in an interior design showroom and residence.

The designation affects only the exterior of the three exposed walls and roof of the stone section of the building.

SCHEDULE "C"

BY-LAW NUMBER (1983) -11332

ELEMENTS OF PROPERTIES AND BUILDINGS BEING DESIGNATED

FORMER WELLINGTON COUNTY JAIL

- The exterior of the limestone walls of the two-storey building.
- The crenellated parapet walls around the roof edges.
- The seven chimneys attached to the building.
- Size and location of windows in the north, east and south walls.
- Construction of the front entrance in the north wall.

It is intended that windows may be converted to earlier types appropriate to the period of construction.

FORMER GOVERNOR'S RESIDENCE

- The exterior of the limestone walls of the house.
- The hip-roof and dormer.
- The stone and wood verandah on the north facade.
- Size and location of windows and doors in the north, south and west walls.
- The two stone chimneys.

It is intended that an addition may be made to part of the south wall in order to make use of the two existing doors. The connection between the house and the former jail is not included in the designation.

258 WOOLWICH STREET

- The exterior of the limestone walls on the north-east, south-east and north-west sides of the stone section of the building.
- The gable roof and eave brackets.
- Size and location of windows and doors in the north-east, south-east and north-west walls.

It is intended that former windows may be re-opened in the south-east wall and that windows may be converted to earlier types appropriate to the period of construction.

GOLDIE MILL RUINS AND PROPERTY

- The three-storeystone walls of the north-westerly section.
- The two-storey stone walls of the Elevator Building (middle section)
- The brick chimney.
- The riverside wall including ruins of the boiler room windows.

The remainder of the property is designated to include:

- Foundations which are buried to the north and north-west of the ruins.
- River willows along the riverbank of the property.

Retention of other trees on the property is not required under this designation.

394092

No.
Land Registry Division of Wellington South (No. 61)
I CERTIFY that this instrument is registered as of
85 FEB 1 PM 3:27 in the

Land
Registry Office
at Guelph
Ontario.

Land Registrar

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11332
A by-law to designate portions of the buildings and properties at 74 Woolwich Street (Former Wellington County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street items of architectural and historical significance.

Read a first and second time at 11:07 o'clock p.m., November 7th, 1983.

Read and passed in Committee at 11:08 o'clock p.m., November 7th, 1983.

Read a third time and passed at 11:09 o'clock p.m., November 7th, 1983.

IN THE MATTER OF THE ONTARIO HERITAGE ACT,
R.S.O. 1990, CHAPTER 0.18
AND IN THE MATTER OF THE PROPERTY KNOWN AS

79 CARDEN STREET

IN THE CITY OF GUELPH,
IN THE PROVINCE OF ONTARIO

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO: **Ontario Heritage Trust**
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

TAKE NOTICE THAT the Council of the Corporation of the City of Guelph has passed By-law Number 2013–19615 to designate portions of the property known as 79 Carden Street as being of cultural heritage value or interest under Part IV, Sec. 29 of the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this day of July 29, 2013.

Stephen O'Brien,
City Clerk
City Hall, 1 Carden St.
Guelph, ON N1H 3A1

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2013)-19615

A by-law to designate portions of the building and property municipally known as 79 Carden Street and legally described as Part of Market Place (aka Jubilee Park), Plan 8, designated as Part 39, Reference Plan 61R11523, City of Guelph, as being a property of cultural heritage value or interest.

WHEREAS the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18*, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS on 26 March 2013 the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 79 Carden Street, (Guelph Train Station Building) and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the cultural heritage value or interest of the property is set out in Schedule "A" hereto; and

WHEREAS no notice of objection to the said property designation was served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. Portions of the building and property known as 79 Carden Street, as described in Schedule "B" to this By-law, are designated as being of cultural heritage value or interest under Part IV, Sec. 29 of the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.*

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "C" to this By-law in the proper Land Registry Office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this TWENTY-NINTH day of JULY 2013.

KAREN FARBRIDGE - MAYOR

BLAIR LABELLE – CITY CLERK

SCHEDULE A
By-law Number (2013) – 19615

STATEMENT OF CULTURAL HERITAGE VALUE OR INTEREST

79 CARDEN STREET, GUELPH
(GUELPH TRAIN STATION BUILDING)

The Guelph Train Station building has design value or physical value because:

- The Station's architectural design and combination of materials are unique in Guelph;
- It is representative of stations built by the Grand Trunk Railway in Canada and the United States in the early 20th century; and
- The brick and stone masonry on the Station was carried out with a high degree of craftsmanship.

The building has historical value or associative value because the Station has direct associations with the development of rail travel and related industries in Guelph, the western expansion of the Grand Trunk Pacific Railway and to municipal "boosterism", as railway stations were a source of pride for communities across Ontario.

The building has contextual value because the Station remains an integral part of Guelph's core urban landscape and continues to play an active part in the City's transportation network for commuters using VIA Rail and GO Transit service. The Station is also one of several highly visible landmark buildings in the Carden Street / Wyndham Street heritage streetscapes.

SCHEDULE B
By-law Number (2013) – 19615

DESCRIPTION OF HERITAGE ATTRIBUTES

79 CARDEN STREET, GUELPH
(GUELPH TRAIN STATION BUILDING)

The following elements of 79 Carden Street are to be protected under Part IV of the Ontario Heritage Act, R.S.O. 1990, Chapter O.18.:

Exterior:

- All exterior brick and stone walls of the building;
- The roofline over the entire building, including the campanile tower and the brick chimney;
- All original exterior woodwork (including soffits and extended eaves with rafter tails);
- All door and window openings;
- All wood sash windows;
- Ceramic tile floor of loggia at front door under tower.

Interior:

- Original ceramic tile floor and decorative border;
- Original coved ceiling in the Waiting Room.

It is intended that non-original features may be returned to documented earlier designs or to their documented original form without requiring City Council permission for an alteration to the designation.

SCHEDULE C
By-law Number (2013) – 19615

LEGAL DESCRIPTION

79 CARDEN STREET, GUELPH
(GUELPH TRAIN STATION BUILDING)

The property known as 79 Carden Street is legally described as Part of Market Place (aka Jubilee Park), Plan 8, designated as Part 39, Reference Plan 61R11523, City of Guelph.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11115

A by-law to designate portions of the buildings and properties at 1 Quebec Street and 99-101 Norfolk Street and at 15 Oxford Street as items of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 1 Quebec Street and 99-101 Norfolk Street and as 15 Oxford Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real properties and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the clerk of the municipality;

THEREFORE, The Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historic and/or architectural value and interest, portions of the commercial-residential building at 1 Quebec St. and 99-101 Norfolk St. (The Duncan-McPhee and Gallery One Building) and portions of the house at 15 Oxford St., which portions are more particularly described in Schedule "C" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the properties described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this seventeenth day of January, 1983.

MAYOR

CLERK

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1983)-11115 of the City of Guelph, Passed on the 17th day of January 1983

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this 30th day of January 1984

Clerk

SCHEDULE "A"

By-law Number (1983)-11115

This by-law is to be registered on the title to each of the following properties:

1 Quebec St. and 99-101 Norfolk St.

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, and being composed of part of Lot Number Eighty-Six (86) of the Canada Company's Survey and which may be more particularly described as follows, that is to say:
COMMENCING at the northwesterly angle of the said Lot Eighty-Six the said point being at the intersection of the southerly limit of Quebec Street and the easterly limit of Norfolk Street;
THENCE South 33 degrees east along the said easterly limit of Norfolk Street 68.1 feet to the southwesterly angle of a stone building;
THENCE North 56 degrees, 37 minutes East along the southerly wall of the said stone building 45.5 feet to a brick wall;
THENCE South 33 degrees, 23 minutes East along the said brick wall 5.45 feet to an angle in the wall;
THENCE continuing along the said brick wall south 17 degrees, 35 minutes east 9.0 feet to the southerly angle of the said brick building;
THENCE North 72 degrees, 25 minutes East 15.75 feet along a brick wall to the corner of the building;
THENCE North 72 degrees 5 minutes East 30.2 feet to the northwesterly angle of a stone stable;
THENCE North 69 degrees 27 minutes east along the northerly limit of the stone stable 0.5 feet to a brick wall;
THENCE North 20 degrees 33 minutes West along the westerly limit of the foundation of the said brick wall of a brick stable 58.35 feet to the southerly limit of Quebec Street;
THENCE South 76 degrees 30 minutes West along the said limit of Quebec Street 107.35 feet more or less to the place of beginning.
All of which is shown red on the sketch attached to instrument registered in the Registry Office for the South and Centre Ridings of the County of Wellington as Number C15-11227;
TOGETHER WITH the right to maintain the eaves of the buildings at present upon the said lands as the same now are and which project over any adjacent property. EXCEPTING thereout and therefrom all that part of the said lands conveyed to Jacob Kloepfer and Francis Kloepfer by instrument registered in the Registry Office for the South and Centre Ridings of the County of Wellington as Number 15820 in Book C20, the said excepted part being therein described as follows:-

.../2

1 Quebec St. and 99-101 Norfolk St. - Continued

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario and being composed of part of Lot Number 86 in Canada Company Survey better known and described as follows, that is to say:-

COMMENCING at a point in the southerly limit of Quebec Street distant 77.35 feet easterly from the intersection of the said southerly limit of Quebec Street with the easterly limit of Norfolk Street;

THENCE North 76 degrees 30 minutes East 30 feet to a brick building

THENCE South 20 degrees 33 minutes East 58.35 feet to the northerly limit of a stone building;

THENCE South 69 degrees 27 minutes West along the said northerly limit of the stone building 0.5 feet to the northwesterly angle thereof;

THENCE South 72 degrees 25 minutes West, 28 feet;

THENCE Northerly in a straight line to the place of beginning.

15 Oxford St.

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of the North-East Half of Lot Number 692 in the Canada Company Survey.

SCHEDULE "B"

BY-LAW NUMBER (1983)-11115

STATEMENTS OF REASONS FOR DESIGNATION

1 QUEBEC ST., 99-101 NORFOLK ST. (Duncan-McPhee and Gallery One)

This two-storey, two-part building of local limestone is a distinguished example of mid-nineteenth century architecture in Guelph. The southern portion, (99 Norfolk Street) was built in 1853 by John Catchpole, tinsmith, grandson of Henry Catchpole who bought the land from the Canada Company in 1836. Tradition claims it to have been the first stone structure erected on Norfolk Street.

An impressive extension (1 Quebec Street) was added in 1864, at the corner of the property, by George Howard, Guelph's mayor when the City was incorporated in 1879. The structure, built with superior cut-stone masonry and crowned with a handsome cornice and curved roof, has fine proportions and a gracefully curved corner facade.

In 1954, the total building was rehabilitated by Duncan-McPhee Interiors. Both units retain their historic character with only limited, sympathetic alterations.

The designation covers the northerly and south-westerly facades of stone at No. 1 Quebec Street and Nos. 99-101 Norfolk Street, the roof profiles and the stone parapets of the end walls which frame the roof. The interior, with other exterior walls to the south-east and east, are excluded, as is the brick addition of later date to the east.

15 OXFORD STREET

The Regency-styled cottage at 15 Oxford Street is one of the finest mid-nineteenth century stone cottages in the city. It was built c.1862 for James Perry. In addition to its fine general proportions, its distinguishing features include the unusually tall twelve-pane shuttered windows and the handsomely-designed entrance door with transom and side-lights. The building has been well cared for and retains its original character.

For over sixty years, this was the residence of the David Scroggie family. During the 1880's and 1890's, Scroggie served as an alderman and as City Treasurer. His daughter, Miss M. A. Scroggie, was one of the leading Guelph artists at the turn of the century and on occasion used this home to display her paintings.

The designation covers the presently-exposed exterior of the stone structure with its roof profile and three chimneys of parged brick. It does not include the brick addition built at the rear at a later date.

SCHEDULE "C"

BY-LAW NUMBER (1983)- 11115

ELEMENTS OF PROPERTIES AND BUILDINGS BEING DESIGNATED

A. 1 Quebec St. and 99-101 Norfolk St.

(a) The limestone facades facing Quebec St. to the north and facing Norfolk St. on the south-west,including window and door openings. At 1 Quebec St., it is permitted that compatible alterations may be made in the window and door locations at the ground floor or alterations which bring these windows and doors closer to the original design. The present Colonial store front design dates from 1954.

(b) The stone parapets which extend above the roof at the eastern end wall, at the dividing wall between the higher building at 1 Quebec St. and the lower building to the south and at the southeasterly end wall. It would be permitted to cover or alter the eastern end wall and/or south-easterly end wall.

(c) The present form and profile of the roofs and the cornice of 1 Quebec St.

B. 15 Oxford St.

(a) The presently-exposed portions of the stone structure at the front of the property, including its twelve-pane, shuttered windows, its front door with transom and side-lights, its roof form and profile and its three brick chimneys which are presently parged.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)- 11115

A by-law to designate portions of the buildings and properties at 1 Quebec Street and 99-101 Norfolk Street and at 15 Oxford Street as items of architectural and historical significance.

Read a first and second time at 10:11 o'clock p.m., January 17, 1983.

Read and passed in Committee at 10:12 o'clock p.m., January 17, 1983.

Read a third time and passed at 10:13 o'clock p.m., January 17, 1983.

IN THE MATTER OF THE ONTARIO HERITAGE ACT,
R.S.O. 1990, CHAPTER 0.18
AND IN THE MATTER OF THE PROPERTY KNOWN AS

122 CARDIGAN STREET

IN THE CITY OF GUELPH,
IN THE PROVINCE OF ONTARIO

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO: Ontario Heritage Trust
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

TAKE NOTICE THAT the Council of the Corporation of the City of Guelph has passed By-law Number 2018-20298 to designate portions of the property known as 122 Cardigan Street as being of cultural heritage value or interest under Part IV, Sec. 29 of the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this day of July 9, 2018.

Stephen O'Brien,
City Clerk
City Hall, 1 Carden St.
Guelph, ON N1H 3A1

September 27, 2018

City Hall
1 Carden St
Guelph, ON
Canada
N1H 3A1

T 519-822-1260
TTY 519-826-9771

guelph.ca

IN THE MATTER OF THE ONTARIO HERITAGE ACT,
R.S.O. 1990, CHAPTER 0.18
AND IN THE MATTER OF THE PROPERTY KNOWN AS

122 CARDIGAN STREET

IN THE CITY OF GUELPH,
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September 27, 2018

City Hall
1 Carden St
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Canada
N1H 3A1

T 519-822-1260
TTY 519-826-9771

guelph.ca

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2018)-20298

A by-law to designate portions of the building and property municipally known as 122 Cardigan Street and legally described as PT PARK LOT 88, PLAN 8, PART 3, 61R7139; GUELPH, as being a property of cultural heritage value or interest.

WHEREAS the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18*, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS on October 31, 2017 the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 122 Cardigan Street, and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the cultural heritage value or interest of the property is set out in Schedule "A" hereto; and

WHEREAS no notice of objection to the said property designation was served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. Portions of the building and property known as 122 Cardigan Street, as described in Schedule "B" to this By-law, are designated as being of cultural heritage value or interest under Part IV, Sec. 29 of the *Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.*

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "C" to this By-law in the proper Land Registry Office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this NINTH day of JULY, 2018.

CAM GUTHRIE - MAYOR

DYLAN MCMAHON – DEPUTY CLERK

By-law Number (2018)-20298
SCHEDULE A

STATEMENT OF CULTURAL HERITAGE VALUE OR INTEREST

122 CARDIGAN STREET, GUELPH

122 Cardigan Street is worthy of designation under Part IV of the Ontario Heritage Act as it meets three of the prescribed criteria for determining cultural heritage value or interest according to Ontario Regulation 9/06 made under the Ontario Heritage Act. The heritage attributes of 122 Cardigan Street display: design or physical value, historical or associative value and contextual value.

The subject property has design value or physical value as its simple Georgian style is representative of Guelph's mid-1850s taverns. The building was constructed of local limestone in 1854 for Bernard Kelly as a two-storey tavern and inn.

The property has historical value because of its association with the "Civil Barney Kelly", with Kelly's inn and tavern and the 19th-century working class history of Guelph.

The property has contextual value in that during the 1850s Guelph was a prominent grain marketing, milling and industrial centre. Kelly's Inn would have functioned as a social centre for the workers employed at the many mills and industries along the Speed River. In this historic milling area, only Kelly's Inn and the ruins of Goldie Mill remain from the 1850s. Kelly's Inn makes up an important vestige of the historical streetscape. As a corner property at the intersection of Cardigan Street and London Road East, Kelly's Inn is a landmark.

By-law Number (2018)-20298
SCHEDULE B

DESCRIPTION OF HERITAGE ATTRIBUTES

122 CARDIGAN STREET, GUELPH

The following elements of the property at 122 Cardigan Street should be considered heritage attributes in a designation under Part IV of the Ontario Heritage Act:

- Roof line;
- Exterior stone walls;
- Location and form of original window and door openings

It is intended that non-original features may be returned to documented earlier designs or to their documented original without requiring City Council permission for an alteration to the designation.

By-law Number (2018)-20298
SCHEDULE C

LEGAL DESCRIPTION

122 CARDIGAN STREET, GUELPH

The property known as 122 Cardigan Street is legally described as PT PARK LOT 88, PLAN 8, PART 3, 61R7139; GUELPH.

Wce

County of Wellington 88

IN THE MATTER OF THE ONTARIO HERITAGE ACT, R.S.O. 1990, CHAPTER 0.18 AND IN THE MATTER OF THE PROPERTIES, OR PORTIONS THEREOF, WITHIN THE BOUNDARIES OF THE CITY OF GUELPH, IN THE PROVINCE OF ONTARIO, WHICH HAVE BEEN DESIGNATED BY BY-LAW AS PROPERTIES, BUILDINGS, OR ITEMS OF CULTURAL HERITAGE SIGNIFICANCE.

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO: Ontario Heritage Trust
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

AND: Stoneleigh Properties Ltd.
P.O. Box 1613
Guelph, Ontario
N1H 6R7

2006-17981

TAKE NOTICE THAT the Council of The Corporation of the City of Guelph has passed ~~By-law~~ Number (2006)–17981 to designate portions of the property known as 133 Wyndham Street North as being of cultural heritage value and interest under Part IV of ~~The Ontario~~ Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this TWENTIETH day of MARCH, 2006.

Lois Giles
Director of Information
Services/City Clerk
City Hall, 59 Carden St.
Guelph, Ontario
N1H 3A1

8/23/06

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2006) – 17981

A by-law to designate the property municipally known as 133 Wyndham Street North and legally described as Part Lots 44 and 45, Plan 8, (as described in CS43271); Guelph, as being a property of cultural heritage value and interest.

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 133 Wyndham Street North, and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. There is designated as being of cultural heritage value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, portions of the building and property known as 133 Wyndham Street North to the extent more particularly described in Schedules "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this TWENTIETH day of MARCH, 2006.

K.M. QUARRIE - MAYOR

LOIS A. GILES – CITY CLERK

SCHEDULE A
By-law Number (2006) – 17981

The property is legally described as Part Lots 44 and 45, Plan 8, (as described in CS43271); Guelph.

SCHEDULE B
By-law Number (2006) – 17981

STATEMENT OF REASONS FOR DESIGNATION:

"ALMA BLOCK"
127-135 WYNDHAM STREET, GUELPH

- A very fine example of mid-nineteenth century commercial architecture
- Age and character of the building contribute to the downtown streetscape
- Owned by prominent early Guelph businessman
- Designed by a well-known Toronto architect
- Unusually ornate stonework in a commercial structure

Built by local businessman James Massie to replace an earlier structure that was destroyed by fire, the Alma block is an exceptional example of mid-19th Century commercial architecture.

The original building on the site of the Alma block was a three-storey limestone structure built in 1854 for W.J. Brown. It provided space at street level for three shops beneath a series of segmental arches. A fire caused by a match falling on to an oil-soaked floor destroyed the building in December of 1867 and the following year the building's owner, wholesale grocer James Massie, commissioned a replacement.

The new Alma block was designed by Toronto architect James Smith, with masonry work by local contractors Kennedy & Pike. James Barkley was the carpenter, and Messrs. Hamilton & Sons of Toronto were hired for the iron work. The first three sections (127-133 Wyndham Street North) were erected in 1868 with three storeys and a large cellar. In keeping with the design of the previous building, the new structure had space for three street-level shops and a series of columns supporting segmental arches. It was divided into three sections of three bays each but was expanded to include a fourth, almost identical section within a few years, probably 1874. Once completed the two northernmost sections were occupied by James Massie's grocery business, one as a retail location, the other for wholesale.

With its prominent downtown location the Alma block has served as the home of many businesses. From the late 1880s until 1933 the northern unit (number 135) housed George Williams' grocery store, a local landmark famous for its "confectionary, cakes, pasty, soda water, ice cream, Dr. Sweet's Root Beer, fruit and groceries". The grocery was replaced by John Armstrong's dry goods businesses which moved from 95 Wyndham where it had been established in 1911. Armstrong remained in the Alma block for over forty years. Other notable inhabitants of the block include The Great Atlantic and Pacific Tea Company (later to become A & P Foods) which could be found at 133 through the 1930s, and the Victoria Billiard Parlour, found at the same address during the 1950s and 60s. More recent tenants have included the Simply Wonderful toy shop and Thomas Entertainment. In 2001 Wellington County Social Services took the space at 127-131 Wyndham and renovated the street-level exterior, reintroducing the segmented arch design which had been lost, though at a modified scale with much greater arch spans.

The Alma block is an excellent example of mid-nineteenth century commercial architecture in late Italianate style. Constructed of dressed limestone, it has a number of fine details, including:

- a dentilated cornice and stone parapet

- rusticated raised architraves leading to round-headed window openings with bracketed entablatures on the second floor and labels on the third
- tooled sill courses
- rusticated corner pilasters

Also notable are the original sashes of the upper floors at 133 Wyndham. The second floor sashes are completely original; the vertical muntins of the lower sash have been removed in the third floor windows.

The rear additions to the buildings that face Wyndham Street were built in at least two different periods after the construction of the Wyndham-facing block. The most westerly is the back of 135 Wyndham, and has the address of 128 Woolwich. It is a two and a half storey structure of stone and brick, faced with pick-dressed limestone, constructed of coursed rough limestone on the west side and brick on the east. The door and windows have been modernized but retain their original locations. 128 Woolwich was built by 1874 as it appears in historical photographs from that date.

The most easterly extension is a one and a half storey rough coursed limestone building with the address of 122 Woolwich, which is connected to 127-131 Wyndham Street North. Though probably built around the same 1870s period, it has been heavily modernized with new doors and window openings.

SCHEDULE C
By-law Number (2006) – 17981

WHAT IS TO BE PROTECTED BY DESIGNATION:

"ALMA BLOCK"
133 WYNDHAM STREET NORTH, GUELPH

On the Wyndham Street Exterior:

- The original exterior stone street facades, including all decorative stonework at window and door openings;
- The pattern and material of the original windows;

It is intended that any non-original features may be returned to their original documented form without requiring City Council permission for an alteration to the designation.

file 90 Wellington

IN THE MATTER OF THE ONTARIO HERITAGE ACT, R.S.O. 1990, CHAPTER 0.18 AND IN THE MATTER OF THE PROPERTIES, OR PORTIONS THEREOF, WITHIN THE BOUNDARIES OF THE CITY OF GUELPH, IN THE PROVINCE OF ONTARIO, WHICH HAVE BEEN DESIGNATED BY BY-LAW AS PROPERTIES, BUILDINGS, OR ITEMS OF CULTURAL HERITAGE SIGNIFICANCE.

NOTICE OF PASSING OF DESIGNATION BY-LAW

TO: Ontario Heritage Trust
The Ontario Heritage Centre
10 Adelaide St. East
Toronto, ON M5C 1J3

AND: Clerks & CAO
The County of Wellington
74 Woolwich Street
Guelph, Ontario
N1H 3T9

TAKE NOTICE THAT the Council of The Corporation of the City of Guelph has passed By-law Number (2006)–17979 to designate portions of the property known as 138 Wyndham Street North as being of cultural heritage value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18.

Dated at Guelph, Ontario, this TWENTIETH day of MARCH, 2006.

Lois Giles
Director of Information
Services/City Clerk
City Hall, 59 Carden St.
Guelph, Ontario
N1H 3A1

RE
8/24/06

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (2006) – 17979

A by-law to designate the property municipally known as 138 Wyndham Street North and legally described as Part Lots 71 & 72, Plan 8; Part Burying Ground, Plan 8; Part Lane, Plan 8 at the rear of lots 71 and 72, (aka Park Lane) closed by CS31228, (as described in CS35380 save and except CS58221); Guelph; as being a property of cultural heritage value and interest.

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of cultural heritage value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 138 Wyndham Street North, and upon the Ontario Heritage Trust, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE CITY OF GUELPH, ENACTS AS FOLLOWS:

1. There is designated as being of cultural heritage value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, portions of the building and property known as 138 Wyndham Street North to the extent more particularly described in Schedules "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Trust and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this TWENTIETH day of MARCH, 2006.

K.M. QUARRIE - MAYOR

LOIS A. GILES – CITY CLERK

SCHEDULE A
By-law Number (2006) – 17979

The property is legally described as Part Lots 71 & 72, Plan 8; Part Burying Ground, Plan 8; Part Lane, Plan 8 at the rear of lots 71 and 72, (aka Park Lane) closed by CS31228, (as described in CS35380 save and except CS58221); Guelph.

SCHEDULE B
By-law Number (2006) – 17979

STATEMENT OF REASONS FOR DESIGNATION:

"THE DOMINION PUBLIC BUILDING"
138 WYNDHAM STREET NORTH, GUELPH

- It was the only significant public building constructed in Guelph during the Depression era
- The building is the only example of "Modern Classicism" in Guelph

The Post Office on Wyndham Street opened for service on July 1st, 1936. It was then known as the "Dominion Public Building" for it housed several federal government functions in addition to that of the post office, including offices for the Department of Agriculture and the R.C.M.P. on the second floor. The name can still be read on the facade even though the letters have long since been removed.

The location of the new government building in 1936 on Wyndham Street finally filled in a long time gap in that street which had been created when the Stewart Lumber Company buildings burned in 1921. Regrettably, moving the post office functions from the old Post Office/Customs House on St. Georges Square was one of the factors that lead to that iconic building's eventual demolition in the 1960s.

The design of the Dominion Public Building is an excellent example of what can best be described as "Modern Classicism", a style known as a 20thC variant of Beaux Arts principles which sought to give a fresh interpretation to traditional monumental classicism. The "Dominion Public Building" may well be the only example of this type of building in Guelph, and can be distinguished in the building's symmetrical design and by its decorative details. The original central entrance bay is flanked by matching end bays rendered in a subtle hierarchy of detail. Tall fluted pilasters connect these major bays and reinforce the classical ordering of the composition. The pilasters provide a series of six two storey window configurations, within which each of the upper and lower windows are divided by a dramatic metal sculptural panel that highlights the experimentation of the style. The sculptural decoration on the facade is very impressive and rare in Guelph.

In general, the building is a particularly successful version of the architectural style which was widely used for government buildings in the 1930s and 1940s. There are variants of this building style throughout the country (and the world), in large and small government projects, ranging from the Supreme Court in Ottawa (Ernest Cormier, 1939) and the Postal Delivery Building on Bay Street, Toronto (Charles Dolphin, 1941) (now part of the Air Canada Centre), to small branch post offices such as the New Toronto Post Office on Lakeshore and Seventh Street (1937).

The plans were drawn in 1934 by Vaux Chadwick, an architect in Toronto, for the Department of Public Works in Ottawa, where Thomas Fuller and Charles Sutherland were the Chief Architects. The only practising architect in Guelph at the time, William A. Mahoney, was the supervising architect. The building was constructed by Tope Construction of Hamilton at a cost of $250,000.

The building, especially its exterior, is in very good shape. At some point the main front entrance was closed and probably at the same time the south entrance was opened and the material reused to infill the centre portico. The interior public space has been modified by partitioning and mechanical systems, however a great deal of original material appears

to survive and could be restored.

The majority of the rest of the building is rough warehouse space. Of historical note is the completely separate, enclosed 'observation gallery' -- an interconnected catwalk which is hung from the ceiling of the ground and second floor spaces, where mail handling and postage transactions could be observed by the R.C.M.P. and later postal management, without being visible to, or interacting with, the postal workers or the public.

SCHEDULE C
By-law Number (2006) – 17979

WHAT IS TO BE PROTECTED BY DESIGNATION:

"THE DOMINION PUBLIC BUILDING"
138 WYNDHAM STREET NORTH, GUELPH

On the Exterior:

- The street façade including all masonry work, window openings and architectural metalwork;
- The side and rear stone facades;
- The stained glass window on the north side yard facade;
- The north and south side yard open spaces including the wrought-iron security fencing;
- The appearance of the two storey façade from Wyndham Street.

On the Interior:

- The ground floor public room running parallel to Wyndham, including all remaining original plaster, metal and stone finishes;
- The two-storey stair hall and vestibule at the northeast corner, including the original handrail, original metal door detailing and architectural finishes;

It is intended that any non-original features may be returned to their documented original form without requiring City Council permission for an alteration to the designation.

Guelph
ONTARIO • CANADA
CITY HALL (519) 822-1260
59 CARDEN ST. N1H - 3A1

August 24th, 1979.

The Ontario Heritage Foundation
7th Floor,
77 Bloor Street, West,
Toronto, Ontario.

Dear Sir:

For your files, I am enclosing a certified copy of City of Guelph by=law number (1979)-10057; a by-law to designate certain buildings and properties of Architectural and Historical Importance.

Yours truly,

W. G. Hall,
City Clerk.

WGH: sc
encl.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1979) - 10057

A by-law to designate the exterior of the former Wellington Hotel at 147-161 Wyndham Street North as a building of Architectural and Historical Importance.

WHEREAS The Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owner of the lands and premises known as the former Wellington Hotel, at 147-161 Wyndham Street North, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "C" hereto; and

WHEREAS no notice of objection to the said proposed designation has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historical and architectural value and interest, specific portions of the exterior of the former Wellington Hotel at 147-161 Wyndham Street North which are more specifically described in Schedule "B" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" hereto, being Part of Lot 45, Canada Company Survey, 147-161 Wyndham Street North, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this seventh day of May, 1979.

MAYOR

CLERK

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1979) - 10057 of the City of Guelph, Passed on the seventh day of May, 1979,

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this twenty-fourth day of August 1979

Clerk

SCHEDULE "A"

By-law Number (1979) - 10057

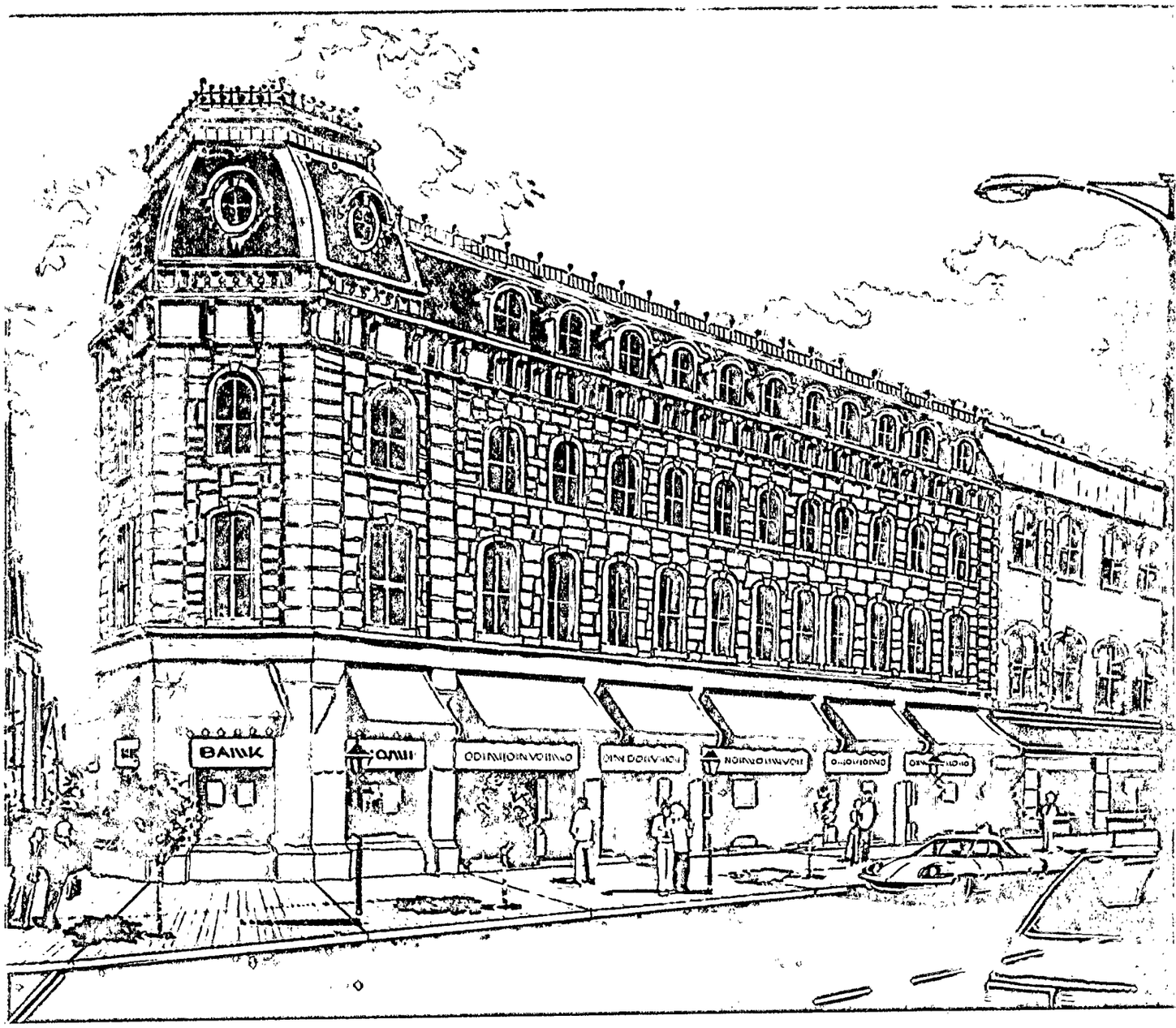
This by-law is to be registered on the title to the following property:

ALL AND SINGULAR that certain parcel of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and being composed of that part of Lot Number Forty-five (45) in the Canada Company's Survey more particularly described as follows:

COMMENCING on the northerly limit of Wyndham Street at a distance of one hundred and twenty-six (126) feet from its intersection with the southerly limit of Woolwich Street; thence North 34 degrees 10 minutes West, one hundred (100) feet eight (8) inches, more or less, to the westerly corner of the new Wellington Hotel; thence North 5 degrees and 10 minutes East, ten (10) feet, ten (10) inches, more or less; thence North 57 degrees 30 minutes East, ten (10) feet, eleven (11) inches, more or less, to Woolwich Street; thence along Woolwich Street southeasterly one hundred and fifty (150) feet, two (2) inches, more or less, to the easterly angle of the said Hotel; thence southwesterly at right angles to Woolwich Street thirty-four (34) feet, four (4) inches, more or less; thence northwesterly parallel to Woolwich Street, forty-eight (48) feet, ten (10) inches, more or less; thence southeasterly parallel to Wyndham Street nine (9) feet, eleven (11) inches, more or less, to the centre of a party wall between the said Hotel and the property known as the Masonic Hall Buildings: thence southwesterly at right angles to Wyndham Street and along the centre of the said party wall, sixty (60) feet, more or less, to the place of beginning.

SCHEDULE "B"

By-law Number (1979) - 10057



ELEMENTS TO BE DESIGNATED

The limestone facades of the building facing Wyndham Street and Woolwich Street, excluding the ground floor store fronts and including the mansard roof, dormers, corner dome and details at the fourth floor and roof level as illustrated in the above drawing.

SCHEDULE "C"
By-law Number (1979) - 10057

Statement of Reasons for the Proposed Designation

For over a century, the Wellington Hotel has been one of the essential visual anchors which contribute a monumental and distinctive character to the architecture of Guelph's business section. It stands out as a major feature in the appearance of Upper Wyndham Street and the Trafalgar Square area and as a prominent and unusually attractive landmark,highly visible from the Eramosa Hill and from the various streets converging upon Trafalgar Square. One of Canada's outstanding examples of the Louis-Phillipe (Second Empire) Style, the building featured an elaborately-enriched mansard roof and ornamental corner dome, It appears more closely related to the boulevards of mid-19th Century Paris than to the prosaic streets of Ontario. With the combination of its impressive design, unusual triangular site, and majestic location, this hotel is a unique architectural feature for Guelph which is unparallelled in the street-scapes of Canadian cities.

The architect was Victor Stewart who designed many prominent buildings in this city during the mid-1870's. His work gave Upper Wyndham Street much of its distinctive style and character. The structure was built of limestone from local quarries and was completed in the Fall of 1877. It succeeded the earlier Wellington Hotel which had been situated on the north side of St. George's Square, during the period 1846-1876. The "new" Wellington Hotel was constructed for $45,000 (including land) and was financed by a joint stock company created for the purpose by seven Guelph businessmen: James Massie, John Hogg, Robert Stewart, George Sleeman, John A. Wood, Wm. Henry Mills and James Innes.

Extensive interior alterations were made in 1908 with minor changes at street level until 1971. The building retained its original exterior with minimal change until a disastrous fire, in July 1975, destroyed the roof and fourth floor with serious damage to much of the interior.

During 1979, the former Wellington Hotel is being rebuilt as an office building inside the original limestone walls. It will be capped by a mansard roof, dormers, corner dome,and details similar to the original fourth floor and roof. The interior and ground floor street fronts will be of more modern design.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1979) - 10057

A by-law to designate the interior of the former Wellington Hotel at 147-161 Wyndham Street North as a building of Architectural and Historical Importance.

Read a first and second time at 8:55 o'clock p.m., May 7, 1979

Read and passed in committee at 9:00 o'clock p.m., May 7, 1979

Read a third time and passed at 9:02 o'clock p.m., May 7, 1979

No. 220901
Registry Division of Wellington South (No. 61)
I CERTIFY that this instrument is registered as of
P.M. 1-27 AUG 2[illegible] 1979 in the
Land
Registry Office
at Guelph
Ontario.
LAND REGISTRAR

10 00

City Hall

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1992) - 14065

A by-law to designate portions of the exterior of the building on property known as 221 Woolwich Street as an item of architectural and historical significance.

The Council of the Corporation of the City of Guelph, **ENACTS AS FOLLOWS:**

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 221 Woolwich Street, notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of architectural and historical value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1980 Chapter 337, portions of the exterior of the building on property known as 221 Woolwich Street to the extent more particularly described in Schedule "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED on this second day of March 1992.

JOHN COUNSELL - MAYOR

LOIS A. GILES - CLERK

I hereoy certify the above copy to be a true copy of

By-law Number (1992)-14065

of the City of Guelph.

IN TESTIMONY WHEREOF are hereunto set the seal of The Corporation of the City of Guelph and the hand of the City Clerk of the said Corporation this 10th day of March, 19 92

City Clerk

SCHEDULE "A"

By-law Number (1992) - 14065

All of Lot 19 and Part of Lots 21 and 22, Registered Plan 35, City of Guelph, County of Wellington, being more particularly described as follows:-

PREMISING that the northerly limit of Woolwich Street has a bearing of N 76° 00' 00" W and relating all bearings herein thereto;

COMMENCING at an iron bar marking the westerly angle of the said Lot 19;

THENCE N 14° 00' 00" E along the westerly limit of the said Lot 19 and its northerly production, a distance of 64.67 feet to a point;

THENCE N 52° 30' E, a distance of 31.25 feet to a point;

THENCE N 37° 00' 00" W, a distance of 33.10 feet to an iron bar in the northerly limit of the said Lot 21, being also the southerly limit of Norwich Street;

THENCE N 54° 10' 00" E along the northerly limits of the said Lots 21 and 22, being also the southerly limit of Norwich Street, a distance of 78.65 feet to an iron bar therein;

THENCE S 36° 39' 00" E, a distance of 59.90 feet to a point;

THENCE S 46° 18' 00" W, a distance of 40.19 feet to a point;

THENCE S 14° 28' 30" W, a distance of 20.53 feet to a point in the south limit of the said Lot 21;

THENCE N 80° 32' 30" E along the south limit of the said Lot 21, a distance of 0.93 feet to an iron bar marking the most easterly angle of the said Lot 19;

THENCE S 14° 00' 00" W along the easterly limit of the said Lot 19, a distance of 77.95 feet to an iron bar marking the southerly angle of the said Lot 19;

THENCE N 76° 00' 00" W along the southerly limit of the said Lot 19, being also the northerly limit of Woolwich Street, a distance of 70.00 feet to the point of commencement.

PREVIOUSLY DESCRIBED IN INSTRUMENT NUMBER 650192.

SCHEDULE "B"

By-law Number (1992) - 14065

STATEMENT OF REASONS FOR DESIGNATION

221 Woolwich Street

This two-storey limestone building is one of a group of four distinctive Woolwich Street houses designed and built by local architect, John Hall, between the years 1872 and 1877. The building was originally constructed as a one storey stone cottage dating from the 1840 period, which Hall remodelled into a fashionable Italianate residence in 1877 for owner Dr. James H. McGregor. Hall, who began his career as a carpenter/builder, established a strong reputation as an architect through the design of this residence, which led to commissions for a number of major public buildings in the City during the early 1880s.

The building is a fine example of the Italianate architectural style of the period and features bold arched window lintels, wide projecting roof eaves with cornice brackets and two projecting bay windows with wood ornamentation on the first floor. The front door is accented by an arched pediment of finely carved stone and features a curved transom with side lights. The building remains in very good condition and forms part of a fine grouping of significant buildings along this block.

The building has served as the residence and offices of a number of prominent Guelph physicians, including Dr. James H. McGregor and family from 1868 to 1883 and Dr. Richard Orton from 1883 to 1892. Dr. Henry Howitt, an internationally known surgeon and pioneer of many important developments in surgical technique, resided in the house from 1892 until 1918, when the property was sold to his son, Dr. Henry O. Howitt, Medical Officer of Health for the City between the years 1910 and 1920 and a noted City physician and surgeon. The house was sold in 1957 to Dr. Howitt's daughter, Amy Grace Dunbar and her husband Angus Dunbar, Q.C., who practised law in Guelph for sixty six years. The building was owned by members of the Howitt family for over 100 years.

The designation includes the entire exterior stone walls of the building, all door and window locations and all window frames and sashes including all glass, the wood window shutters on the front, westerly and easterly sides of the building, all carved stone ornamentation, the side lights and transom at the main entrance, all fascias, soffits and all wood soffit brackets and cornice under the roof gable, the two projecting bay windows located on the front facade and westerly side of the building, including all wood ornamentation and brackets, and the two storey front porch. The existing roof and roof lines over the entire building, including the existing westerly paired chimney stack, are also designated, with the exception of the sloped roof, dormer and window over the larger of the rear one storey sections of the building.

SCHEDULE "C"

By-law Number (1992) - 14065

ELEMENTS OF PROPERTY AND BUILDING BEING DESIGNATED

The designation includes:

1) all exterior stone walls of the building;

2) all door and window locations;

3) all window frames and sashes and all glass;

4) the wood window shutters on the Woolwich Street facade of the building and the westerly and easterly sides of the building;

5) all carved stone ornamentation on the building;

6) the side lights and transom at the main Woolwich Street facade entrance to the building;

7) all fascias, soffits, wood soffit brackets and the cornice under the roof gable;

8) the two projecting bay windows on the Woolwich Street facade and westerly side of the building including all wood ornamentation and brackets;

9) the two storey front porch;

10) the westerly stone paired chimney stack and its location;

11) the roof and roof lines over the entire building, with the exception of the sloped roof, dormer and window over the larger of the rear one storey sections of the building.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1992) - 14065

A by-law to designate portions of the property known as 221 Woolwich Street as an item of architectural significance.

Read a first and second time at
10:44 o,clock p.m., March 2nd, 1992.

Read and passed in Committee at
10:45 o'clock p.m., March 2nd, 1992.

Read a third time and passed at
10:46 o,clock p.m., March 2nd, 1992.

City of Guelph

CITY HALL, 59 Carden Street
Guelph, Ontario, Canada N1H 3A1

OFFICE OF CITY CLERK

Telephone (519) 837-5603

February 7th, 1985.

Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

Dear Sir:

For your files, I am enclosing a certified copy of by-law number (1983)-11332, a by-law to designate the Former Wellington County Jail and Governor's Residence at 74 Woolwich Street, The Residence at 258 Woolwich Street and the Goldie Mill Ruins and Property on Cardigan Street as items of architectural and historical significance.

You will note from the cover page, the by-law was registered on February 1, 1985, as Instrument Number 394092.

Yours truly,

W. G. Hall
City Clerk

:ckf

enclosure

c.c.
Mr. J. C. Andrews
County Clerk
County of Wellington
74 Woolwich Street
Guelph, N1H 3T9

Mr. N. Harrison
Guelph Planning Dept.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11332
A by-law to designate portions of the buildings and properties at 74 Woolwich Street (Former Wellington County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street as items of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 74 Woolwich Street (Former County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real properties and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. Portions of the buildings at 74 Woolwich Street, Guelph, known as the former Wellington County Jail and Governor's Residence; portions of the building at 258 Woolwich Street; and the masonry construction of the former Goldie Mill which survives after the 1983 stabilization project, the ninety-foot brick chimney, as well as the surrounding property owned by the Grand River Conservation Authority and known as the Former Goldie Mill lands on Cardigan Street which are more particularly described in Schedule "C" to this by-law, are hereby designated as being of historic or architectural value or interest.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the properties described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this seventh day of November, 1983.

.....
Mayor

.....
Clerk

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1983)-11332 of the City of Guelph, Passed on the seventh day of November, 1983.

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this fifth day of February, 1985.

.....
Clerk

SCHEDULE "A"

TO BY-LAW (1983) - 11332

74 WOOLWICH STREET

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, and Province of Ontario, and being composed of Lots 10, 11, 12, and 13, Prior's Block, Registered Plan Number 8, City of Guelph.

258 WOOLWICH STREET

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, and Province of Ontario, and being composed of part of Lot No. 42 in Hubbard's Survey according to Registered Plan No. 35 which may be better known and described as follows, that is to say:

COMMENCING at the Easterly angle of said Lot cornering on Woolwich and Charles Streets;

THENCE North 34 degrees, 10 minutes West along Woolwich Street 40.59 feet;

THENCE South 55 degrees, 50 minutes West 88.22 feet;

THENCE South 34 degrees, 10 minutes East 40.59 feet more or less to Charles Street;

THENCE North 55 degrees, 50 minutes East 88.22 feet more or less along Charles Street to the place of beginning.

GOLDIE MILL RUINS AND PROPERTY

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario; being composed of Part of the Mill Lands on Cardigan Street and part of the original bed of the River Speed, in the Canada Company's Survey of the Town, now City of Guelph, and which may be also known as part of the Saw Mill Lot in Divisions "A" and "F" and described as follows:-

PREMISING that the line of London Road has a bearing of North 45 degrees East, and relating all bearings contained herein thereto;

COMMENCING at the end of the following courses and distances:-

BEGINNING at the point where the Easterly limit of Cardigan Street would be intersected by the production Northeasterly of the Northwesterly limit of London Road;

THENCE South 29 degrees 08 minutes East, along the production of the said Easterly limit of Cardigan Street, 20.2 feet to its intersection with the existing fence between the Mill Lands and the lands used for the right-of-way of the Guelph and Goderich Railway and the Canadian National Railway;

THENCE South 49 degrees 57 minutes East, along the said fence, 171.08 feet to the Southerly angle of lands expropriated by the City of Guelph by By-law (1964)-5729, Registered Instrument M-40697;

THENCE North 56 degrees 31 minutes East, along the Southeasterly limit of lands conveyed by Registered Instrument M-40697 aforesaid, 161.65 feet to an iron pipe marking the point of commencement and the Westerly angle of the lands intended to be conveyed hereby and which may be also marked as Point "A";

THENCE South 33 degrees 29 minutes East, 456.30 feet more or less to an iron pipe on the Northeasterly limit of lands of the Guelph and Goderich Railway as described in Registered Instrument 7943;

THENCE South 52 degrees 32 minutes East, along the last mentioned limit, 2.90 feet to an iron pipe marking a bend therein;

THENCE South 58 degrees 48 minutes East, continuing along the above mentioned limit, 90.41 feet more or less to an iron pipe marking its intersection with the Northwesterly limit of Norwich Street;

THENCE North 54 degrees 13 minutes East, along the said limit of Norwich Street, 12.90 feet more or less to an iron bar marking the Southerly angle of lands conveyed to Oscar Strome by Registered Instrument 40826 Book C49 and which may be marked as Point "B";

THENCE North 48 degrees 11 minutes West, along the Southwesterly limit of lands conveyed by Registered Instrument 40826 aforesaid, 60 feet to an iron bar;

THENCE North 40 degrees 30 minutes West, continuing along the above mentioned limit, 62 feet to an iron bar;

THENCE North 34 degrees 48 minutes West, 132.80 feet to a point in the Northwesterly limit of lands presently owned by Oscar Strome;

THENCE North 56 degrees 19 minutes East along the aforesaid limit of Strome's lands being also the Southeasterly limit of lands described in Registered Instrument 66454, Book C87, a distance of 36.50 feet to a point;

THENCE continuing along the last mentioned limits North 46 degrees 07 minutes East, 31.90 feet to a point;

THENCE North 54 degrees 13 minutes East, 5.5 feet more or less to an iron bar;

THENCE continuing North 54 degrees 13 minutes East 30 feet more or less to the Southwesterly high water mark of the Speed River as it exists in January 1970;

THENCE in a general Northwesterly direction on various courses and distances following the high water mark to the Southeasterly angle of lands expropriated by City of Guelph By-law No. 5729 -(1964), Registered Instrument M-40697;

THENCE South 56 degrees 31 minutes West, along the Southeasterly limit of lands conveyed by Registered Instrument M-40697 aforesaid, 119.5 feet more or less to the point of commencement;

SCHEDULE "B"

BY-LAW NUMBER (1983)-11332

STATEMENTS OF REASONS FOR DESIGNATION

FORMER COUNTY JAIL AND GOVERNOR'S RESIDENCE 74 WOOLWICH STREET

The exterior restoration of the jail and Governor's Residence, built in 1911 by the County of Wellington and the City of Guelph, and the adaptation of the interiors to new use will complete the rehabilitation of the County's complex of buildings, begun in 1980, and will balance its composition. G.A. Scroggie, Contractor, constructed the buildings in 1911 to plans by W.A. Mahoney, Architect. Much of the stone used was salvaged from the original octagonal jail of 1839, the first permanent public building in town. It had been designed by Toronto Architect Thomas Young and built by William Day. A segment of the stone-walled exercise yard of 1839 survives intact in the south-west corner of the 1911 building.

GOLDIE MILL RUINS AND PROPERTY

The former Goldie Mill site is one of the most historic manufacturing locations in the City. In 1827 David Gilkison, cousin of John Galt, built a saw mill here beside the Speed River. Doctors W. Clarke and H. Orton built the "Wellington Mills" in 1845. After a fire, the mills were rebuilt in stone in 1850 and renamed the "People's Mills". They burned again in 1864 and James Goldie purchased the property in 1866, extensively enlarging the stone buildings in 1867. The flour mills continued to expand under the direction of the Goldie family until sold in 1918. The mill operated until a spring flood in 1929 carried away the dam. Most of the structure was unused since a serious fire in 1953. In the 19th Century, the manufacturing complex included a foundry, a sawmill, cooperage, distillery, piggery and tannery. Its growth contributed significantly to the growth and prosperity of Guelph.

Among the unique architectural features of the masonry construction of the thick stone walls were the double-reinforced stone lintels, an unusual type of construction in Ontario. The most impressive remaining section of the structure was built in 1867 with quarry-faced limestone. All stone was quarried on the mill property.

The designation covers all masonry construction which survives after the 1983 stabilization project, the ninety-foot brick chimney as well as the surrounding property as purchased by Grand River Conservation Authority in March 1976.

258 WOOLWICH STREET

This two-storey stone dwelling was built for Samuel Hodgskin, Accountant, in 1871-72 on Lot 42 of Hubbard's Survey, (R.P. 35). The brick addition at the rear is believed to have been added by Hodgskin about 1877. This is one of a series of three fine stone houses of varied styles which form a unified grouping, unequalled elsewhere in Guelph, between Charles Street and Edwin Street.

With a bracketed facade gable, this tasteful masonry house is characteristic of a building style used in homes of modest pretentions during the 1870's. In its 112 years, it has had a

variety of owners and tenants. It was converted to four apartments in the 1940's but extensive restoration work was carried out in early 1981 by the present owners, Illusion Designed Interiors, resulting in an interior design showroom and residence.

The designation affects only the exterior of the three exposed walls and roof of the stone section of the building.

SCHEDULE "C"

BY-LAW NUMBER (1983) -11332

ELEMENTS OF PROPERTIES AND BUILDINGS BEING DESIGNATED

FORMER WELLINGTON COUNTY JAIL

- The exterior of the limestone walls of the two-storey building.
- The crenellated parapet walls around the roof edges.
- The seven chimneys attached to the building.
- Size and location of windows in the north, east and south walls.
- Construction of the front entrance in the north wall.

It is intended that windows may be converted to earlier types appropriate to the period of construction.

FORMER GOVERNOR'S RESIDENCE

- The exterior of the limestone walls of the house.
- The hip-roof and dormer.
- The stone and wood verandah on the north facade.
- Size and location of windows and doors in the north, south and west walls.
- The two stone chimneys.

It is intended that an addition may be made to part of the south wall in order to make use of the two existing doors. The connection between the house and the former jail is not included in the designation.

258 WOOLWICH STREET

- The exterior of the limestone walls on the north-east, south-east and north-west sides of the stone section of the building.
- The gable roof and eave brackets.
- Size and location of windows and doors in the north-east, south-east and north-west walls.

It is intended that former windows may be re-opened in the south-east wall and that windows may be converted to earlier types appropriate to the period of construction.

GOLDIE MILL RUINS AND PROPERTY

- The three-storeystone walls of the north-westerly section.
- The two-storey stone walls of the Elevator Building (middle section)
- The brick chimney.
- The riverside wall including ruins of the boiler room windows.

The remainder of the property is designated to include:

- Foundations which are buried to the north and north-west of the ruins.
- River willows along the riverbank of the property.

Retention of other trees on the property is not required under this designation.

394092

No.
Land Registry Division of Wellington South (No. 61)
I CERTIFY that this instrument is registered as of
85 FEB 1 PM 3:27 in the

Land
Registry Office
at Guelph
Ontario.

Land Registrar

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1983)-11332
A by-law to designate portions of the buildings and properties at 74 Woolwich Street (Former Wellington County Jail and Governor's Residence), 258 Woolwich Street and Goldie Mill Ruins and Property, Cardigan Street items of architectural and historical significance.

Read a first and second time at 11:07 o'clock p.m., November 7th, 1983.

Read and passed in Committee at 11:08 o'clock p.m., November 7th, 1983.

Read a third time and passed at 11:09 o'clock p.m., November 7th, 1983.

Guelph
ONTARIO • CANADA
CITY HALL (519) 822-1260
59 CARDEN ST. N1H - 3A1

August 24th, 1979.

The Ontario Heritage Foundation,
7th Floor,
77 Bloor Street, West,
Toronto, Ontario.

Dear Sir:

For your files, I am enclosing a certified copy of City of Guelph by-law number (1979)-10058; a by-law to designate certain buildings and properties of Architectural and Historical Importance.

Yours truly,

W. G. Hall,
City Clerk.

WGH: sc
encl.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1979) - 10058

A by-law to designate all, or portions of, the properties at 96-98 Water Street, 108 Water Street (The McCrae Birthplace Museum), 40 Albert Street and 264 Woolwich Street as buildings and properties of Architectural and Historical Importance.

WHEREAS The Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 96-98 Water Street, 108 Water Street (The McCrae Birthplace Museum), 40 Albert Street and 264 Woolwich Street, and upon the Ontario Heritage Foundation, notice of intention to so designate all of, or portions of, the aforesaid real properties and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "C" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historic and architectural value and interest, portions of the original residence at 96-98 Water Street, the total property at 108 Water Street (The McCrae Birthplace Museum), portions of the residence at 40 Albert Street and portions of the residence and premises at 264 Woolwich Street, which are more specifically described in Schedule "B" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the properties described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this seventh day of May, 1979.

Norman Jary
MAYOR

W. G. Hall
CLERK

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1979)-10058 of the City of Guelph, Passed on the Seventh day of May, 19 79,

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this Twenty-Fourth day of August 19 79.

W. G. Hall
Clerk

SCHEDULE "A"

By-law Number (1979) - 10058

This by-law is to be registered on the title to each of the following properties:

96 Water Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario; being composed of parts of Lots Numbers Thirty-Four (34) and Thirty-five (35) according to Registered Plan No. 37 for the said City and which said parcel or tract of land and premises may be more particularly described as follows:

PREMISING that the southeasterly limit of Water Street has a bearing of North 45 degrees 12 minutes East and relating all bearings herein thereto;

COMMENCING at the northerly angle of Lot 35;

THENCE South 45 degrees 12 minutes West along the southeasterly limit of Water Street a distance of 43.62 feet;

THENCE South 44 degrees 48 minutes East to and along the centre of a frame partition in the Veranda of a double stone house twenty-three and forty-five one-hundredths (23.45) feet to the northwesterly face of the northwesterly stone wall of said double house;

THENCE North 45 degrees 12 minutes East along the said face of said wall four and forty-five one-hundredths (4.45) feet;

THENCE South 44 degrees 53 minutes East along the centre of a division wall in said double house twenty and sixty-two one-hundredths (20.62) feet;

THENCE South 45 degrees 43 minutes West along the centre line of a stone division wall eight and nine one-hundredths (8.09) feet to the centre of another stone division wall;

THENCE South 44 degrees 48 minutes East along the centre of said last mentioned stone division wall thirteen and seventy-one one-hundredths (13.71) feet to the southeasterly face of the southeasterly stone wall of said double house;

THENCE South 45 degrees 12 minutes West along the said last mentioned face of wall Eighty-seven one-hundredths (.87) of a foot to a corner of said stone house;

THENCE South 44 degrees 48 minutes East thirty-eight and thirty-five one-hundredths (38.35) feet to an oak stake planted;

THENCE South 45 degrees 12 minutes West thirty-eight and ninety-eight one-hundredths (38.98) feet to an oak stake planted in the north-easterly limit of lands formerly conveyed to Roy McGinnis by Registered Instrument C54-45346 for said City;

THENCE North 45 degrees 12 minutes East a distance of 48.53 feet more or less to the southwesterly limit of Mary Street;

THENCE North 45 degrees West along the northeast limit of said Lots 34 and 35 being also along the southwesterly limit of Mary Street a distance of 87.29 feet more or less to the point of commencement.

...2

98 Water Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario; being composed of parts of Lots 34 and 35 according to Registered Plan 37 for the said City, and which said parcel or tract of land and premises may be more particularly described as follows:

COMMENCING at a point in the northwesterly limit of Lot 35 distant 45.0 feet measured northeasterly therealong from the most westerly angle of Lot 35;

THENCE North 45° 12' East along the northwesterly limit of Lot 35, being along the southeasterly limit of Water Street, 43.50 feet to a point distant 43.62 feet measured southwesterly along the northwesterly limit of Lot 35 from the most northerly angle thereof;

THENCE South 44° 48' East to and along the centre of a frame partition in the veranda of a double stone house 23.45 feet to the northwesterly face of a northwesterly stone wall of said double house;

THENCE North 45° 12' East along the said face of said wall 4.45 feet;

THENCE South 44° 53' East along the centre of a division wall in said double house 20.62 feet;

THENCE South 45 degrees 43 minutes West along the centre-line of a stone division wall 8.09 feet to the centre of another stone division wall;

THENCE South 44° 48' East along the centre of said last mentioned stone division wall 13.71 feet to the southeasterly face of the southeasterly stone wall of said double house;

THENCE South 45° 12' West along the said last mentioned face of wall 0.87 of a foot to a corner of said stone house;

THENCE South 44 degrees 48 minutes East 30.28 feet to the northwesterly limit of the lands conveyed to Allan N. Gray and Audrey L. Gray by Registered Instrument M-20248;

THENCE South 44° 22' West, along the northwesterly limit of the lands conveyed by Registered Instrument M-20248, 39.0 feet more or less to the northeasterly limit of the lands conveyed to Roy McGinnis by Registered Instrument 45346 C54;

THENCE North 44° 48' West, along the northeasterly limit of the lands conveyed by Registered Instrument 45346 C54, 88.63 feet to the point of commencement.

108 Water Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, containing by admeasurement forty-eight (48) perches of land, more or less, and being composed of Lot No. 36 according to Registered Plan No. 37 for the said City.

40 Albert Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of Lot No. 16, on Albert Street, in Thompson's Survey of parts of the North-east Halves of Lots Numbers 1 and 2 in the Third Concession of Division "C", as shown on Registered Plan No. 37.

264 Woolwich Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of all of Lot No. 58 and a portion of adjoining Lot No. 42, both in Hubbard's Survey, Registered Plan No. 35, which may be more particularly described as follows:

PREMISING that the Northeasterly limit of the said lots, being Southwesterly limit of then Norfolk Street, now Woolwich Street, has a bearing South Thirty-four degrees (34°) and Ten minutes (10') East and relating all bearings herein thereto:

COMMENCING at the Northerly angle of said Lot No. 58;

THENCE South Fifty-five degrees (55°) and Fifty minutes (50') West, Ninety-nine feet (99') more or less to the Westerly angle of said Lot No. 58;

THENCE South Thirty-four degrees (34°) and Ten minutes (10') East, One Hundred and Five and Sixty one-hundredths feet (105.60') more or less to the Southerly angle of the said Lot No. 42;

THENCE North Fifty-five degrees (55°) and Fifty minutes (50') East along Charles Street, Eleven feet (11');

THENCE North Thirty-four degrees (34°) and Ten minutes (10') West, Forty and Fifty-nine one-hundredths feet (40.59');

THENCE North Fifty-five degrees (55°) and Fifty minutes (50') East, Eighty-eight and Twenty-two one-hundredths feet (88.22') more or less to Woolwich Street;

THENCE North Thirty-four degrees (34°) and Ten minutes (10') West, along Woolwich Street, Sixty-five and One one-hundredth feet (65.01') more or less to the place of beginning.

SCHEDULE "B"

By-law Number (1979) - 10058

Elements of Properties and Buildings Being Designated

96-98 Water Street

The limestone walls on three sides of the original house (those walls facing Water Street, Mary Street and in a westerly direction) and the roof. The eight carved heads on the front gable-end are worthy of special mention. Original woodwork in the interior and the main staircase lit by a skylight are also designated by this by-law as being of architectural importance.

108 Water Street

The entire property owned by The Colonel John McCrae Birthplace Society is designated by this by-law.

40 Albert Street

The whole of the limestone front portion of the residence is designated by this by-law, with the exception of the back wall which is built into three other portions of the house. The central frame section to the rear is designated, as is the restoration work and original interior details within the building.

264 Woolwich Street

The exterior of the two-storey stone section of the residence is designated by this by-law, including carved stone ornamentation, the front doors and front windows. The stone parapet wall which surrounds the front yard, topped with cast-iron cresting and terminated by monolithic stone piers, is also designated. Later single-storey additions on the south and west walls are not included in the designation.

SCHEDULE "C"

By-Law Number (1979) - 10058
Statement of Reasons for Designations

96 - 98 Water Street (Bell-O'Donnell House)

This house was built of local limestone, circa 1858, by Matthew Bell (1820 - 1883), Guelph stone carver and mason, who was a native of Newcastle, England. It has received national recognition for its distinctive series of eight carved stone heads. The sculptural decoration of the north-east gable is a notable feature of the house. Presently a duplex dwelling, the building has survived 121 years with little alteration. The interior contains much of the original woodwork, including an unusual curved staircase lit by a skylight. The designation does not include the rear (southerly) wall of the original two-storey house or any existing or future addition or accessory building attached to, or behind, the rear walls.

108 Water Street (The McCrae Birthplace Museum)

This modest limestone cottage, built in the early 1860's, was the birthplace of Guelph's famous poet-physician-soldier, Lt. Col. John McCrae (1872-1918). The property was purchased in 1966 by the McCrae Birthplace Society and carefully restored under the supervision of architect Peter Stokes in 1968. It now functions as an active museum and is a major tourist attraction to this city. The national significance of the building has been recognized with a plaque of the National Historic Sites and Monuments Board of Canada. It adjoins the McCrae Memorial Gardens, developed in 1946 by the Colonel John McCrae Memorial Branch 237, of the Canadian Legion. The structural character and details of the stone house, the porch and the board and batten accessory building are representative of domestic architecture in this area during the 1860's.

40 Albert Street (Bell-Carlton House)

Matthew Bell, accomplished local stone carver and masonry contractor, built this stone house c. 1872, although there is a possibility that the frame central section is of earlier date. It is one of a series of notable stone houses which Bell constructed in Guelph. The distinguished scale and proportion of the building have been enriched with fine sculptural details in stone, including the window lintels, the ornate framing of the central doorway, and the three carved stone heads. The present owner, [redacted], has taken great care in repairing the masonry and in restoring the original architectural fabric of both the interior and exterior. The house received the 1977 Award of Merit from the Guelph Arts Council for the quality of the restoration work which has been undertaken.

264 Woolwich Street

Built about 1858-59, this well-proportioned two-storey house provides a unique example of the richly-carved stone ornamentation characteristic of Italianate Style in Guelph's mid-19th Century architecture. The impressive carved forms used as lintels and enrichments for the facade have been attributed to the Guelph sculptor Matthew Bell, and reflect his distinguished craftsmanship. These features are rarely found elsewhere in the Province. A fine stone parapet wall, topped with cast-iron cresting, parallels the street. Its gateposts and termination piers are each formed from single massive blocks of stone. The interior of the house retains portions of its original detailing. The 19th-Century double door and window sash contribute to the period character of the front facade. Later single-storey additions on the south side and west side are not included in the designation.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1979) - 10058

A by-law to designate all, or portions of, the properties at 96-98 Water Street, 108 Water Street (The McCrae Birthplace Museum), 40 Albert Street and 264 Woolwich Street as buildings and properties of Architectural and Historical Importance.

Read a first and second time at 8:55 o'clock p.m., May 7, 1979

Read and passed in Committee at 9:00 o'clock p.m., May 7, 1979

Read a third time and passed at 9:02 o'clock p.m., May 7, 1979

No. 220902
Registry Division of Wellington South (No. 61)
I CERTIFY that this instrument is registered as of
P.M. 1·32·
AUG 24 1979 in the
Land
Registry Office
at Guelph
Ontario.

LAND REGISTRAR

6 lots

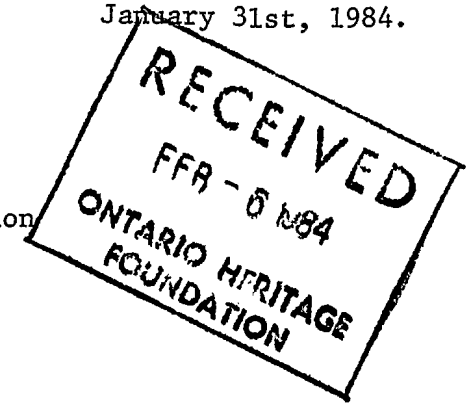
202
City of Guelph

CELEBRATING TOGETHER
1784 · ONTARIO · 1984

Guelph
ONTARIO • CANADA

CITY HALL (519) 822-1260
59 CARDEN ST. N1H 3A1

January 31st, 1984.



Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

Dear Sir:

For your files, I am enclosing a certified copy of by-law numbers (1980)-10466 and (1983)-11115, by-laws to designate certain buildings under the Ontario Heritage Act.

Yours truly,

W. G. Hall
City Clerk

:ckf

enclosure

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1980) - 10466

A by-law to designate portions of the buildings and properties at 27 Barber Avenue, 16 Arthur Street North and 268-270 Woolwich Street as items of architectural and historical significance.

WHEREAS the Ontario Heritage Act, 1974, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as 27 Barber Avenue, 16 Arthur Street North and 268-270 Woolwich Street, and upon the Ontario Heritage Foundation, notice of intention to so designate portions of the aforesaid real properties and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said proposed designations has been served upon the clerk of the municipality;

THEREFORE, The Council of the Corporation of the City of Guelph enacts as follows:

1. There are designated as being of historic and/or architectural value and interest, portions of the residence at 27 Barber Avenue, portions of the original house and details at 16 Arthur Street North and portions of the double house at 268-270 Woolwich Street, which are more particularly described in Schedule "C" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the properties described in Schedule "A" hereto, in the proper land and registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid properties and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED by the Council of the Corporation of the City of Guelph this fifteenth day of September, 1980.

Norman Jary
MAYOR

CLERK

I, W. GORDON HALL, Clerk of the Municipality of the City of Guelph, hereby certify that the above copy of a by-law is a true copy of by-law Number (1980)-10466 of the City of Guelph, Passed on the 15th day of September, 19 80.

IN TESTIMONY WHEREOF are hereunto set the seal of the Corporation of the City of Guelph and the hand of the Clerk of the said Corporation this 30th day of January, 19 84.

Clerk

SCHEDULE "A"

By-law Number (1980)-10466

This by-law is to be registered on the title to each of the following properties:

27 Barber Avenue

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario, being composed of parts of Original Canada Company Park Lots 3 and 4 in Range 3, Division "A" now in said City, and which said parcel or tract of land and premises may be more particularly described as follows:

COMMENCING at a point in the northwesterly limit of Barber Avenue as laid out on Registered Plan No. 393 for the said City, said point being distant 100 feet from the northeasterly limit of Westmount Road;

THENCE North 44 degrees 56 minutes 30 seconds West, 213.92 feet to an iron bar planted;

THENCE North 45 degrees 7 minutes 30 seconds East, 309.37 feet to its intersection with the southwesterly limit of a tier of lots on the southwesterly side of Lyon Avenue as shown on Registered Plan 316 for the said City;

THENCE South 45 degrees 30 minutes 50 seconds West, 58.05 feet to an iron bar planted;

THENCE South 45 degrees West, 185 feet to an iron bar planted;

THENCE South 45 degrees East, along the centre line of a common driveway or right-of-way, 88.8 feet;

THENCE South 19 degrees 48 minutes East, continuing along the said centre line of said right-of-way, 73.27 feet to its intersection with the northwesterly limit of Barber Avenue as laid out on said Registered Plan 393;

THENCE South 45 degrees West, along the said limit of Barber Avenue, 94 feet more or less to the place of beginning.

16 Arthur Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington and Province of Ontario and being composed of parts of Lots 1 and 2 on the Southwest side of Arthur Street North (formerly Queen Street) according to Registered Plan Number 94:

COMMENCING at an iron bar marking the easterly angle of Lot 2;

THENCE North 64 degrees 00 minutes 00 seconds West along the Southwesterly boundary of Arthur Street North (formerly Queen Street) a distance of 58.30 feet to the easterly angle of those lands of Lot 2 formerly conveyed to E. J. Green by Registered Instrument Number 17183 in Book C-21 for the said City;

THENCE South 26 degrees 18 minutes West along the southeasterly boundary of those lands of the said lot heretofore conveyed as aforesaid, to the high water mark of the River Speed;

THENCE in a southeasterly direction along the said high water mark of the River Speed downstream, and following the various windings thereof in all a distance of 164 feet more or less to a point where the high water mark of the River Speed as delineated by a concrete wall intersects the westerly boundary of Arthur Street;

THENCE North 36 degrees 47 minutes 30 seconds East, 18 feet more or less to a point, said point being the southwesterly angle of that portion of said Lot 1 conveyed to the Corporation of the City of Guelph by registered Instrument Number M-33104;

.../2

16 Arthur Street - Continued

THENCE North 36 degrees 47 minutes 30 seconds East along the westerly limit of the said lot heretofore conveyed as aforesaid a distance of 26.35 feet more or less to the beginning of a curve to the left;

THENCE Northerly along said curve to the left having a radius of 115.27 feet, an arc distance of 79.64 feet, the chord equivalent being 78.06 feet, measured along a course of North 17 degrees 00 minutes 00 seconds East to a point in the northeasterly limit of Lot 1;

THENCE North 24 degrees 00 minutes West a distance of 49.50 feet along the northeasterly limit of said Lot 1 to a point marking an angle therein;

THENCE North 44 degrees 00 minutes West continuing along the northeasterly limit of said Lot 1 a distance of 49.50 feet to the point of commencement.

268 Woolwich Street

ALL AND SINGULAR that certain parcel or tract of land and premises, situate, lying and being the said City of Guelph and being part of Lot number Fifty-nine on Woolwich Street in Hubbard's Survey in the said City according to the plan thereof registered as No. 35; such part of said lands being commonly known as house No. 268 Woolwich Street, having a frontage on Woolwich Street of Twenty-five feet, ten inches from the Easterly angle of said lot to the centre of a stone wall between said house No. 268 and house No. 270: Thence in a Southwesterly direction along the centre of said stone wall and its production Fifty-eight (58) feet to a fence: Thence in a Southeasterly direction parallel to the Southerly boundary of Woolwich Street Twenty-five feet Ten inches to the Southeasterly boundary of said lot: THENCE in a Northeasterly direction along the said Southeasterly boundary of said lot Fifty-eight (58) feet more or less to the place of beginning, together with a right of way approximately two (2) feet in width as now existing along the Southwesterly portion of the adjoining lands commonly known as House No. 270 Woolwich Street to and from Edwin Street, and for all purposes.

270 Woolwich Street

ALL AND SINGULAR that certain parcel or tract of land and premises situate, lying and being in the City of Guelph, in the County of Wellington, and being Part of Lot Number 59 on Woolwich Street in Hubbard's Survey in the said City according to the Plan thereof registered as Number 35, and being more particularly described as follows:

COMMENCING at a point in the most northerly angle of said Lot Number 59 which point is also the point of intersection between the southerly boundary of Woolwich Street and the southeasterly boundary of Edwin Street;

THENCE southeasterly along the southerly boundary of Woolwich Street South 34° 10' East a distance of 26.17 feet more or less to a point in the centre line of the party wall being on and along the southeasterly limit of the lands herein described;

THENCE South 56° 44' West along the said centre line of the party wall and its production southwesterly a distance of 58' to a point;

THENCE North 34° 10' West a distance of 26.17 feet more or less to a point in the southeasterly boundary of Edwin Street;

THENCE North 56° 44' East a distance of 58 feet more or less along the southeasterly boundary of Edwin Street to the Point of Commencement, being all the lands intended to be conveyed by Instrument Number 150641.

SCHEDULE "B"

By-law Number (1980) - 10466

STATEMENT OF REASONS FOR DESIGNATION

27 BARBER AVENUE (Idylwyld)

J. D. Williamson, proprietor of the "Golden Lion" department store, began construction of "Idylwyld" in 1880 on a large estate on London Road West. The architect-designed house was adapted from a similar house, since destroyed, built in Montreal by Mrs. Williamson's parents. Local limestone was used in construction of this French-Mansardic styled house with three floors, basement, and tall corner tower.

It remained with members of the Williamson family until 1927. A large sun-room of matching stone was added to the west side in the early 1930's. The original ornate verandahs were removed in 1942-44. The present owners are restoring much of the house to its original condition, possibly including the original verandahs.

Significant exterior features include the limestone masonry construction, the ornate, decorative wood cornices, and the unique tower with slate roof and cast-iron cresting. Two carved stone lions guard the front steps. The interior retains many examples of quality workmanship and unique design including ornate plaster ceilings, decorative window casements, exceptional woodwork and stairway, decorative brass fittings and numerous etched-glass panels.

"Idylwyld" is probably the best-preserved home of the 1880's in Guelph and is a worthy example of its architectural style. The designation includes the exterior and interior of the original three-storey house, excepting the third floor interior and the rear (north-westerly)facade.

16 ARTHUR STREET NORTH (Sunnyside)

William Kennedy, Scottish stone carver and mason, built "Sunnyside" in 1854 as a wedding gift for his daughter, Mrs. Charles Davidson. It remained with the Davidson family for 123 years. Construction details are documented in the Archives of the University of Guelph.

The two-storey stone house, with its various additions, has recently been rebult inside (1979) to create four apartments. A contemporary sculptor has duplicated the four original columns supporting the unique stone portico facing the river. The original carved columns, with seriously-eroded details, are preserved as interior decoration.

The designation covers the river front facade with its stone portico and such interior examples of Kennedy's work as the original portico columns and the Gothic mantel of carved stone, with a bas-relief of nearby "Ker Cavan", which remains in the southerly living room on the ground floor. Two small pillars capped with early curling stones, which flank the entrance steps, and the carved stone sun-dial pedestal in the garden are also included as significant examples of Kennedy's work.

268-270 WOOLWICH STREET

Built about 1850, or earlier, the two-storey duplex survives as one of Guelph's finer stone houses from that era. Its street facade has a series of distinguished architectural features, some rather rare among Ontario buildings of the period. Framed with bevelled corner quoins, the ashlar limestone masonry is crowned with a fine classic stone cornice. The window architraves and sill-brackets are of carved stone. First floor windows are impressive with complex moldings and decorative hood-molds. Three Tuscan-styled pilasters, each cut from a single block of stone, frame the recessed entrances and support a classic entablature, also of carved stone. The structure has been well-maintained and the interiors retain many original features. The designation covers only the original two-storey stone structure.

SCHEDULE "C"

BY-LAW NUMBER (1980) - 10466

ELEMENTS OF PROPERTIES AND BUILDINGS BEING DESIGNATED

27 Barber Avenue

The limestone walls of the original three-storey house facing south-west, south-east and north-east. The form, material and details of the roof, cornice, tower and chimneys of the three-storey section. Type and location of windows and doors in the three-storey section. Two carved stone lions at the front steps. Interior architectural details of the 19th Century at the main floor and second floor levels of the interior.

It is intended by this by-law that either the original two-storey verandah or the intermediate one-storey verandah or a good facsimile thereof may be re-erected on the south-east and north-east facades (see Schedule "D").

The north-west (rear) facade of the three-storey section of the house, and portions of the building behind that facade, are not included in this designation.. The 20th Century sun-room on the south-west side and the interior details of the third floor are not included in this designation.

16 Arthur Street North

The river-front facade, with its stone portico, entrance steps and curling stone pillars, is the primary portion to be designated. The mantel of carved stone, illustrating"Ker Cavan", and the original portico columns mounted inside the building and the carved stone sun-dial pedestal in the garden are also included as items of architectural significance.

268-270 Woolwich Street

The complete exterior (walls, roof, windows, doors and details) of the original two-storey stone structure is designated by this by-law. It is not the intention of this by-law to designate the interior or particular parts thereof.

INTERMEDIATE VERANDAH
About 1930

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1980) - 10466

A by-law to designate portions of the buildings and properties at 27 Barber Avenue, 16 Arthur Street North and 268-270 Woolwich Street as items of architectural and historical significance.

Read a first and second time at
7:33 o'clock p.m., September 15, 19

Read and passed in Committee at
7:37 o'clock p.m., September 15, 19

Read a third time and passed at
7:38 o'clock p.m., September 15, 19

Lois

City of Guelph

CITY HALL, 59 Carden Street
Guelph, Ontario, Canada N1H 3A1

OFFICE OF CITY CLERK

Telephone (519) 837-5603

March 15th, 1988

The Ontario Heritage Foundation
77 Bloor Street West
Toronto, Ontario
M7A 2R9

Dear Sirs:

For your files I am enclosing a certified copy of By-law Number (1988)-12731, a by-law to designate the Blacksmith Fountain, Priory Square as an item of architectural and historical significance.

You will note the by-law has been registered as Instrument Number 568371 on the 19th day of February, 1988.

Yours truly,

Lois A. Giles
City Clerk

LAG:js

encl.

cc. Mr. N. Harrison
Mr. G. Stahlmann

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1988)-12731

A by-law to designate The Blacksmith Fountain, in Priory Square, as an item of architectural and historical significance.

The Council of The Corporation of the City of Guelph, ENACTS AS FOLLOWS:

WHEREAS the Ontario Heritage Act, R.S.O. 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of The Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as Priory Square, and upon the Ontario Heritage Foundation, notice of intention to so designate a fountain on the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "A" attached hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the Clerk of the municipality;

THEREFORE, the Council of The Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of historical and architectural value and interest, the Blacksmith Fountain, located in Priory Square, which is more particularly described in Schedule "B" to this by-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against Lot 3, Registered Plan No. 712 in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED this 18th day of January , 1988.

MAYOR

CLERK

I hereby certify the above copy to be a true copy of By-law Number (1988)-12731 of the City of Guelph.
IN TESTIMONY WHEREOF are hereunto set the seal of The Corporation of the City of Guelph and the hand of the City Clerk of the said Corporation this 15th day of March, 1988

City Clerk

SCHEDULE "A"

BY-LAW NUMBER (1988)-12731

STATEMENT OF REASONS FOR DESIGNATION

THE BLACKSMITH FOUNTAIN - PRIORY SQUARE

The Blacksmith has been a unique and handsome public monument since its inauguration on Queen Victoria's birthday, 1885. A symbol of industry, it was presented to the city, as the inscription on the red granite base states, by J. B. Armstrong, a prominent local carriage manufacturer.

The statue of a blacksmith, cast in a metal alloy, stands above an octagonal basin, supported by a rococo cast iron pedestal. The fountain's water issues from the mouths of eight rams' heads that decorate the basin's rim.

The Blacksmith stood in the centre of St. George's Square until 1922 when, to facilitate the passage of streetcars through the Square, it was moved to Priory Square. Its position there overlooks the site where Guelph's founder, John Galt, is said to have felled the first tree.

This beloved landmark, scheduled for restoration at the time of designation in 1988, deserves to stand as long as the Royal City remains. It is understood that some or all of the components may have to be replicated at some time in the future. It is also recognized that the fountain is movable and may, in future, take up other suitable prominent positions in the Central Business District of Guelph.

SCHEDULE "B"

BY-LAW NUMBER (1988)-12731

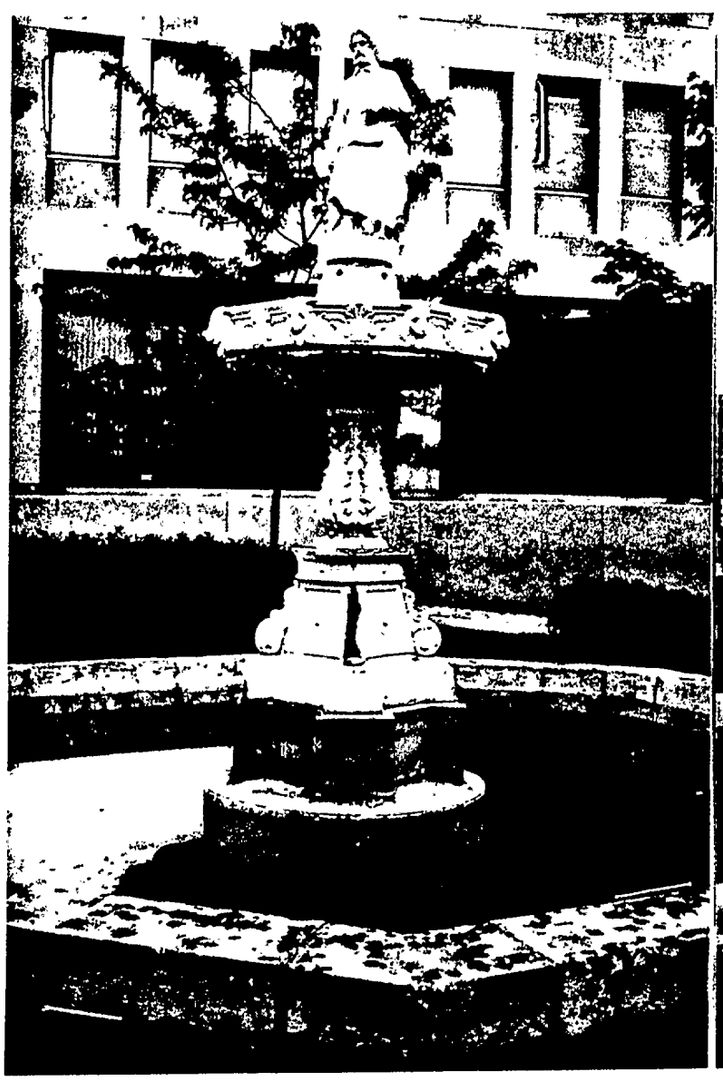
ELEMENTS OF PROPERTY WHICH ARE DESIGNATED BY THE BY-LAW

The designation affects only the following elements of the fountain, as pictured below and in the form and material current at the time the picture was taken in July 1987. It is understood that other materials may be required in repairing these elements, in duplicating them or in reproducing earlier documented features missing in 1987.

A. The metal statue
B. The upper pedestal
C. The cast-iron upper water basin ringed by rams' head water spouts
D. the rococo-style supporting pedestal, apparently of steel with cast-iron embellishments
E. The base of red granite, known to have been shipped from the Bay of Fundy.

The designation does not affect the wide pool enclosure, the surface or landscaping of Priory Park, or the parking garage which is also located on Lot 3 of Registered Plan 712.

Because the fountain has already been moved twice, the Schedule "A" states that it "may, in future, take up other suitable prominent positions in the Central Business District of Guelph."



THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1988)-12731

A by-law to designate The Blacksmith Fountain, in Priory Square, as an item of architectural and historical significance.

Read a first and second time at 9:05 o'clock p.m., January 18, 1988.

Read and passed in Committee at 9:13 o'clock p.m., January 18, 1988.

Read a third time and passed at 9:14 o'clock p.m., January 18, 1988.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1990)- 13541

A by-law to designate the Heffernan Street Footbridge as an item of architectural and historical significance.

The Council of The Corporation of the City of Guelph, **ENACTS AS FOLLOWS:**

WHEREAS the Ontario Heritage Act, 1980, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereof, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as the Heffernan Street Footbridge notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of architectural and historical value and interest under Part IV of The Ontario Heritage Act, R.S.O. Chapter 337, the entire exterior of the Heffernan Street Footbridge, to the extent more particularly described in Schedule "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED on this Seventh day of May, 1990.

ACTING MAYOR

CLERK

I hereby certify the above copy to be a true copy of

By-law Number (1990)-13541

of the City of Guelph.

IN TESTIMONY WHEREOF are hereunto set the seal of The Corporation of the City of Guelph and the hand of the City Clerk of the said Corporation this 10th day of May, 1990

City Clerk

SCHEDULE "A"

BY-LAW NUMBER (1990)- 13541

Being the Heffernan Street Footbridge, located over the Speed River in the City of Guelph, in the County of Wellington and the Province of Ontario, on Heffernan Street, as established and shown by Registered Plan 8, Canada Company Survey, and also Part of Lot 9, Registered Plan 32, opened as Heffernan Street by By-law Number 282.

SCHEDULE "B"

BY-LAW NUMBER (1990)-13541

STATEMENT OF REASONS FOR DESIGNATION

HEFFERNAN STREET FOOTBRIDGE

This graceful concrete arched bridge, which spans the Speed River at St. George's Anglican Church, is a unique decorative feature of the riverscape. Its fine double curve, often reflected in the water below, is clearly visible from both main bridges in the city centre.

The bridge was built for City Council in 1914 by contractors Galbraith and Cate to plans prepared by Ernest E. Clawson, City Engineer. It replaced the original metal arch footbridge, built by the City in 1881, to provide convenient pedestrian access to the downtown for residents of the east side of the river. Although popular with local citizens, the original bridge was ordered removed by the Dominion Railway Commission as it provided no means of safe access over the Canadian Pacific Railway tracks on the west bank. City Council's decision to again erect a footbridge at this site re-established the bridge's functional importance as a mid-block pedestrian link to the City's commercial core and its visual importance as a distinctive piece of Guelph's landscape.

The designation applies to the entire bridge structure.

SCHEDULE "C"

BY-LAW NUMBER (1990)-13541

ELEMENTS OF PROPERTIES AND BUILDINGS BEING DESIGNATED

The designation applies to the entire bridge structure including piers, arches, girders, deck and railings.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1990) - 13541

A by-law to designate the Heffernan Street Footbridge, as an item of architectural and historical significance.

Read a first and second time at 11:38 o'clock p.m., May 7th, 1990.

Read and passed in Committee at 11:39 o'clock p.m., May 7th, 1990.

Read a third time and passed at 11:40 o'clock p.m., May 7th, 1990.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1993) - 14439

A by-law to designate the I.O.D.E. Fountain as an item of architectural and historical significance.

The Council of the Corporation of the City of Guelph, **ENACTS AS FOLLOWS:**

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as the I.O.D.E. Fountain notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality once for each of three consecutive weeks; and

WHEREAS the reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

THEREFORE, the Council of the Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of architectural and historical value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, portions of the I.O.D.E. Fountain to the extent more particularly described in Schedule "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED on this seventh day of September, 1993.

JOHN COUNSELL - MAYOR

LOIS GILES - CITY CLERK

I hereby certify the above copy to be a true copy of

By-law Number (1993)-14439

of the City of Guelph.

IN TESTIMONY WHEREOF are hereunto set the seal of The Corporation of the City of Guelph and the hand of the Deputy Clerk of the said Corporation this 9th day of September, 19 93

Deputy Clerk

SCHEDULE "A"

By-law Number (1993) - 14439

THE I.O.D.E. FOUNTAIN

Part of Norfolk Street and Yarmouth Street as laid out in Registered Plan 8, City of Guelph.

Premising the north easterly limit of Norfolk Street has a bearing of North 34 10 West as laid out on Plan 8.

Commencing at the southerly angle of Lot 941 Plan 8,

Thence in a south easterly direction along the south production of the north east limit of Norfolk Street to the point of intersection of the southerly production of the south west limit of Yarmouth as laid on Registered Plan 8.

Thence North 11 30' West, along the last mentioned limit to the easterly angle of lot 941 Registered Plan 8.

Thence in a south westerly direction along the south easterly boundary of lot 941 to the point of commencement. The land herein described is a park belonging to the Corporation of the City of Guelph referred to in Inst M. 109775.

SCHEDULE "B"

By-law Number (1993) - 14439

STATEMENT OF REASONS FOR DESIGNATION

THE I.O.D.E. FOUNTAIN

The Victoria - Guelph Chapter of the Imperial Order of the Daughters of the Empire was formed on December 4, 1909 as the first I.O.D.E. Chapter in Guelph. At its inaugural meeting, the Chapter stated that its initial work would be the "beautifying and improving of our City and the establishment of a philanthropic influence in Guelph". In this regard, one of the Chapter's first accomplishments was the presentation in 1912 of a drinking fountain to the City in memory of the late King Edward VII.

With the assistance of the City's Parks and Shade Commission, the fountain was erected in 1914 in Trafalgar Square, facing Wyndham Street, on the Square's most prominent position. The contract to design the fountain was awarded by the I.O.D.E. to an English architect named Lund. The fountain, constructed of stone and wood and featuring carved stone embellishments, functioned for many years as a public drinking fountain, and was considered to be one of the City's most handsome public monuments.

In 1927, the fountain was relocated from Trafalgar Square to the triangular green space located at the intersection of Norfolk and Yarmouth Streets to make way for Guelph's War Memorial, which was constructed later that year in time for the City's Centennial celebrations.

The designation includes all masonry, wood and decorative metal elements of the fountain, including all inscriptions, the roofline of the fountain but not the roof fabric. Scheduled for restoration at the time of its designation in 1993, it is understood that some or all of the fountain's components may be replicated or restored.

SCHEDULE "C"

By-law Number (1993) - 14439

ELEMENTS OF PROPERTY BEING DESIGNATED

THE I.O.D.E. FOUNTAIN

The designation includes:

1. All masonry, wood and decorative metal elements of the fountain;

2. The roofline of the fountain, but not the roof fabric.

It is understood that some or all of the fountain's components may be replicated or restored, and it is intended that any non-original features may be returned to documented earlier designs or their documented original form without requiring City Council permission for an alteration to the designation.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1993) - 14439
A by-law to designate portions of the I.O.D.E. Fountain as an item of architectural and historical significance.

Read a first and second time at: 10:32 o'clock p.m., September 7th, 1993.

Read and passed in Committee at: 10:33 o'clock p.m., September 7th, 1993.

Read a third time and passed at: 10:34 o'clock p.m., September 7th, 1993.

THE CORPORATION OF THE CITY OF GUELPH

By-law Number (1998)-15786

A by-law to designate the Norwich Street Bridge as a structure of architectural and historical significance.

The Council of the Corporation of the City of Guelph, **ENACTS AS FOLLOWS:**

WHEREAS the Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, authorizes the Council of a municipality to enact by-laws to designate real property, including all the buildings and structures thereon, or portions thereon, to be of historical or architectural value or interest; and

WHEREAS the Council of the Corporation of the City of Guelph has caused to be served upon the owners of the lands and premises known as the Norwich Street Bridge notice of intention to designate portions of the aforesaid real property and has caused such notice of intention to be published in a newspaper having general circulation in the municipality;

WHEREASthe reasons for designation are set out in Schedule "B" hereto; and

WHEREAS no notice of objection to the said property designation has been served upon the clerk of the municipality;

THEREFORE,the Council of the Corporation of the City of Guelph **ENACTS AS FOLLOWS:**

1. There is designated as being of architectural and historical value and interest under Part IV of The Ontario Heritage Act, R.S.O. 1990, Chapter 0.18, the Norwich Street Bridge to the extent more particularly described in Schedule "C" to this By-law.

2. The City Solicitor is hereby authorized to cause a copy of this by-law to be registered against the property described in Schedule "A" to this By-law in the proper land registry office.

3. The City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owners of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Guelph.

PASSED on this **FIFTEENTH** day of **JUNE, 1998.**

Joe Young
JOE YOUNG - MAYOR

V. Charlene Lavigne
V. CHARLENE LAVIGNE
DEPUTY CITY CLERK

SCHEDULE "A"
BY-LAW (1998)-15786

The Norwich Street bridge, located over the Speed River, in the City of Guelph, in the County of Wellington, Province of Ontario, shown on Registered Plan 40 as a proposed bridge. Includes lands known as part of Bridge Street, Part of the Island at the foot of Norwich Street, in River Speed, Registered Plan 8 and Part of the Bed of River Speed.

SCHEDULE "B"
By-law Number (1998) -15786

STATEMENT OF REASONS FOR DESIGNATION

This steel and iron bridge was built in 1882 by the Hamilton Bridge Company at a cost of just over $1,000 to City Council, who commissioned the work. A bridge spanned the Speed River at this location as early as 1860 and was known first as "the Wellington Foundry Bridge" and later "the Inglis-Hunter Bridge" because of its close proximity to one of the very early industries in Guelph, established circa 1860 on the easterly bank of the river. The bridge became an important link in the movement of materials across the river, serving the needs of the many foundries and mills which occupied this area in the mid-1800s, and the choice of iron over the more traditional and less expensive wooden bridge reflects the growing industrialization of the community. Today, this single span bridge acts as a gateway to the residential area on the east side of the Speed River and serves as a connecting link between the east and west sides of what is now known as the Goldie Mill Neighbourhood. The bridge is the only surviving example of several iron and steel bridges which once existed in Guelph, and is important as a distinctive heritage feature of the riverscape in this area.

The designation applies to the entire steel and iron bridge structure, including the date plates.

SCHEDULE "C"
By-law Number (1998) - 15786
ELEMENTS OF PROPERTY BEING DESIGNATED
Norwich Street Bridge

The designation only applies to:

1. The entire steel and iron structure of the bridge;

2. The date plates on the bridge.

It is intended that any non-original features may be returned to documented earlier designs or their documented original form without requiring City Council permission for an alteration to the designation.

Former Canadian National Railways (VIA Rail/GO Transit) Station

Heritage Railway Station of Canada

Guelph, Ontario

Exterior photo
(© (M. Carter, March 1992.))

Address : 79 Carden Street, Guelph, Ontario

Recognition Statute: Heritage Railway Stations Protection Act (R.S.C., 1985, c. 52 (4th Supp.))
Designation Date: 1992-11-06
Dates: 1911 to 1911 (Construction)
Research Report Number: RS-145

Description of Historic Place

The Former Canadian National Railways(CNR) (VIA Rail/GO Transit) Station at Guelph, built in 1911, is a one-storey, brick railway station with a prominent Italianate tower. It is located on high ground at the centre of Guelph, near the Market Square. The formal recognition is confined to the railway station building itself.

Heritage Value

The Former CNR (VIA Rail/GO Transit) Station at Guelph reflects a period of prosperity for the Grand Trunk Railway(GTR), during which it upgraded facilities to suit the increased volume of traffic. It also reflects local aspirations to acquire a higher profile station in keeping with the high level of railway

service historically obtained by the city.

The Guelph station is characterized by its large size and elaborate design. The station includes a fine Italianate tower and porte cochère, and the use of high-quality finishing materials on the interior. The layout is typical of its time and largely intact.

The station is prominently located on high ground at the city centre. With the city hall and the armoury, it forms a triangle of historic buildings that set the tone for the city's core. It retains its relationship with its site, including: the tracks, the adjacent war memorial; and a pedestrian subway that connects to Guelph's main street. The station's historic importance is recognized by the community.

Sources: Heritage Character Statement, Former CNR/now VIA Rail and GO Transit Station, Guelph, Ontario, May 1993; Heritage Research Associates, Railway Station Report 145, Former Canadian National Railways Station /now VIA Rail and GO Transit, Guelph, Ontario.

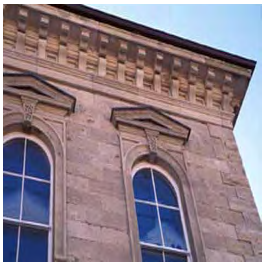
Character-Defining Elements

Character-defining elements of the Former CNR (VIA Rail/GO Transit) Station at Guelph include: its low, one-storey form, dominated by a massive hip roof, and by a prominent porte-cochère and tower its Romanesque Revival aesthetic, evident in: the textural masonry; and voussoired arches over window and door openings its main facades, composed of six equal bays with balanced openings the massive hip roof with ornamented central ridge the square, Italianate-style tower, with: its low-pitched, pyramidal roof; paired, round-arched openings; pilastered corners; and decorative cornice the extended porte-cochère, centrally located on the town side, supported on decorative buttresses and capped by a hip roof the projecting telegrapher's bay on the track side, capped by a hip roof its high quality masonry, including: brick cladding with fine mortar joints; a concrete foundation of granite extending to window-sill height; stone detailing; a finely detailed masonry chimney; and radiating, brick voussoirs over window and door openings its stone detailing in grey granite, including: corner quoins; a string course extending around the building with curved extensions over window and door openings; and keystones and a decorative cornice on the tower its use of contrasting colours, including: brick in colours ranging from buff to salmon; rose-tinted mortar joints; and grey granite foundation and detailing the arrangement of window openings, consisting of single, paired and tripled windows with arched transoms surviving original windows and transoms its interior plan, consisting of a General Waiting Room; Parcel and Baggage Office; Baggage Room; and Ladies' Parlour surviving original interior finishes in the Waiting Room, including: patterned, ceramic-tile floors; window and door trim; and coved and beamed plaster ceilings surviving original interior finishes in the baggage areas, including: tongue-and-groove wall boarding surviving original finishes and trims above the drop ceilings

Guelph City Hall National Historic Site of Canada

Guelph, Ontario

General view



Address : 59 Carden Street, Guelph, Ontario

Recognition Statute: Historic Sites and Monuments Act (R.S.C., 1985, c. H-4)
Designation Date: 1984-11-23
Dates: 1856 to 1857 (Construction)
1875 to 1875 (Significant)
Event, Person, Organization: William Thomas (Architect)
Morrison and Emslie (Builder)
George Netting (Builder)
Matthew Bell (Builder)
Other Name(s): Guelph City Hall (Designation Name)
Research Report Number: Town Hall Study - 1984

Plaque(s)

Existing plaque: 59 Carden Street, Guelph, Ontario
Many Canadian cities erected well-designed municipal buildings during the mid-19th century railway boom. Guelph City Hall, one of the best of this group, symbolized the city's confidence in its future. Designed by Toronto architect William Thomas, it was constructed in 1856-1857. Although the interior has been altered, the smoothly dressed stonework and delicate carving of the exterior design provide an elegant and refined example of civic architecture in a classical style.

Description of Historic Place

Guelph City Hall is a two-storey, limestone building built in 1856-7 in the Renaissance Revival style, and enlarged in 1875. It is prominently located in the downtown area of the city of Guelph, across the street from the train station. The formal recognition consists of the building on its legal property at the time of designation.

Heritage Value

Guelph City Hall was designated a national historic site in 1984 because it is an example of a multi-functional city hall; it symbolized the city's confidence in its future; and the smoothly dressed stonework and delicate carving of the exterior design provide an elegant and refined example of civic architecture in a classical style.

Guelph City Hall was erected, along with other prominent local buildings, during the mid-19th-century period of pride and prosperity that followed the arrival of the Grand Trunk Railway service to the community. It is an excellent example of a mid-19th-century, multi-functional civic building, combining the functions of a market, fire hall, police office and jail, library, a reading room for the Mechanics Institute, a large public hall along with town offices and a council chamber in a single building. Designed by prominent Toronto architect William Thomas and built by Morrison and Emslie with an 1875 addition by George Netting, Guelph City Hall is one of Ontario's finer examples of the mid-19th-century Renaissance Revival style, a classical style based on 16th-century Italian precedents. The carved detailing of the façade were supervised by well-known artisan Matthew Bell.

Source: Historic Sites and Monuments Board of Canada, Minutes, November 1984.

Character-Defining Elements

Key elements which relate to the heritage value of Guelph City Hall include:
its monumental scale and rectangular massing; its classical design in the Italian Renaissance Revival style, notably its symmetrically organized façade with slightly projecting, pedimented central pavilion, its low-pitched, hipped roof, regularly placed openings, smooth, finely cut ashlar exterior, and Italianate detailing; its Italianate detailing, including a central, Venetian window, ornamental balconies, a string course delineating stories, heavily vermiculated voussoirs and quoins at openings and corners, a carved keystone, pedimented lintels, applied pilasters, a bracketed cornice; its facing with smoothly dressed ashlar blocks of Guelph limestone; surviving remnants of its original U-shaped

plan interior layout reflecting its multi-functional use; its central location in the city and its direct relationship to the railway station across the street.

Our Lady of the Immaculate Conception National Historic Site of Canada

Guelph, Ontario

Corner view of side and rear

Address : 50 Norfolk Street, Guelph, Ontario

Recognition Statute: Historic Sites and Monuments Act (R.S.C., 1985, c. H-4)
Designation Date: 1990-02-23
Dates: 1876 to 1888 (Construction)
1925 to 1926 (Significant)
Event, Person, Organization: Joseph Connolly (Architect)
Other Name(s): Our Lady of the Immaculate Conception (Designation Name)
Church of Our Lady of the Immaculate Conception (Plaque name)
Research Report Number: 1989-SUC

Plaque(s)

Existing plaque: Inside the rectory office of the church Norfolk Street across from Macdonell Street, Guelph, Ontario
Our Lady of the Immaculate Conception is an exceptional example of the High Victorian Gothic Revival style, an architectural movement that was international in scope. The design of this church

was inspired by the medieval cathedrals of France. Characteristic of the style are the twin towers, large rose window, pointed windows and an interior plan featuring chapels that radiate from the apse. Constructed in several stages beginning in 1876, the church was designed by Irish-born Joseph Connolly, the principal architect for the Roman Catholic Church in late-19th century Ontario.

Description of Historic Place

Inspired by the medieval cathedrals of France, the twin towers of this large stone church rise above the city centre in Guelph, Ontario. Constructed as the centrepiece of a complex of Roman Catholic religious and educational buildings, the church is prominently situated on the brow of a hill. It features elements inspired by the French Gothic Revival, including, a twin-towered facade, a large rose window and a polygonal apse with radiating chapels. The formal recognition consists of the church building on its footprint.

Heritage Value

Our Lady of the Immaculate Conception was designated a National Historic Site in 1990 because: it is an exceptional example of the High Victorian Gothic Revival style in Canadian architecture.

Unlike the earlier, Ecclesiological phase of Gothic Revival, during which architects were restricted to certain correct precedents, the High Victorian Gothic Revival gave architects freedom to draw inspiration from a wide variety of periods and countries, while still following certain established principles as to composition and structure. Like many churches designed by English-speaking architects in the late19th century, the design of Our Lady of Immaculate Conception shows the strong influence of the French Gothic Revival. Designed by Joseph Connolly, the principal architect for the Roman Catholic church in Ontario, Our Lady of Immaculate Conception incorporates French Gothic Revival features, such as a twin-towered façade, rose windows and a polygonal apse with radiating chapels. Built in 1876-1888 with towers completed in 1925-1926, the church is considered to be Connolly’s best work.

Source: Historic Sites and Monuments Board of Canada, Minutes, October 1990.

Character-Defining Elements

Key elements contributing to the heritage value of Our Lady of the Immaculate Conception include: its High Victorian Gothic Revival style, evident in its plan, composition, façade, and architectural details inspired by the French Gothic Revival, including a cruciform plan with side aisles, prominent nave, triforium arcades, apse with radiating chapels and ambulatory, twin-towered façade, spire at the central groin vault, and large rose windows; the sense of verticality, created by the use of steeply pitched roofs with gables, dormers, pinnacles, pointed arches, and tall narrow window openings; the symmetrically organized façade with its twin square towers with pinnacles and paired openings, massive rose window with bar tracery set in a moulded pointed arch, row of lintel statuary set within a blind arcade, and carved tympanum; the division of side elevations into bays defined by engaged buttresses, with each bay accented by a pointed arch and a stained glass window; the north and south transepts, each distinguished by two lancet windows below a large, stained-glass, rose window

with flanking narrow pinnacles; the polygonal apse, comprised of radiating gabled chapels with another level of gables above; the extensive use of pointed arches and stained glass windows with bar tracery throughout the composition; the Gothic Revival styling of the interior, including, tall pointed-arch windows in the chancel, clerestories inset with rose windows, stained-glass windows, nave-arcades with false triforium-galleries, granite columns with acanthus capitals supporting the aisle arcades, and rib vaulting; the high quality design and craftsmanship of its interior, including its wood and stone carving, its stained glass, its stencilling, its ironwork, its mosaics, and its excellent acoustics; its prominent siting at the top of a hill overlooking the city; viewscapes to and from the church and the city.

APPENDIX 3

STAGE 1 ARCHEALOGICAL ASSESSMENT: BASELINE CONDITIONS

Stage 1 Archaeological Assessment Baseline Conditions: Guelph Downtown Revitalization Program (Former Township of Guelph, County of Wellington), City of Guelph

Draft Report

Prepared for:

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PIF TBD

Archaeological Services Inc. File: 21EA-007

August 4, 2021

Executive Summary

In advance of Archaeological Services Inc.'s (ASI) Stage 1 Archaeological Assessment report, please find below our review of the Baseline Conditions for archaeological resources captured within the Guelph Downtown Revitalization Program. ASI understands that the contents of this baseline conditions report will be used to help inform the project design and selection of a preferred alternative.

ASI will undertake a comprehensive Stage 1 archaeological assessment, including a detailed property inspection once preferred alternatives have been identified for the Project. The Stage 1 report will identify what areas require further assessment and by what methodology they must be surveyed, as per the 2011 Standards and Guidelines for Consultant Archaeologists (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (M.H.S.T.C.I 2011).

Project Personnel

- **Senior Project Manager**: Lisa Merritt, MSc. (P094) Partner, Director, Environmental Assessment Division
- **Project Coordinator**: Katrina Thach, Hon. BA (R1225), Archaeologist, Project Coordinator, Environmental Assessment Division
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- **Field Director**: TBD
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- **Report Reviewer**: Lisa Merritt

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1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by R.V. Anderson Associates Limited to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the Downtown Infrastructure Revitalization Program in the City of Guelph (Figure 1). This project involves a Downtown Infrastructure Revitalization Program which includes the following parts: Part A – Capital Implementation Plan, Part B – MCEA Study for Wyndam Street North and Part C – MCEA for Macdonell and Alan Structure.

Stage 1 scope involves the area outlined in the Capital Implementation Plan Terms of Reference. The Study Area consists of the area designated within the Downtown Secondary Plan as Downtown Guelph but is limited to that portion north of the Metrolinx railway tracks. Particular focus is on streets identified for infrastructure systems improvements that include;

- Wyndham Street North, Carden St to Woolwich St including St. Georges Square area
- Macdonell Street, Norfolk St to Wyndham St N
  Macdonell Street, Wellington St to Arthur St N
- Quebec Street, Norfolk St to Wyndham St
- Baker Street, Quebec St to Woolwich S
- Woolwich Street, Macdonell St to Norfolk St

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (Ontario Heritage Act, R.S.O. c. O.18, 1990, as amended in 2019) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI 2011).

Figure 1 Location of the study area (Base Map: ©OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act, RSO* (Environmental Assessment Act, R.S.O., 1990 as amended 2020) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (Municipal Class Environmental Assessment, 2000, as amended 2015).

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment and property inspection was granted by R.V. Anderson & Associates Limited on April 9, 2021.

1.1.1 Treaties and Traditional Territories

The Study Area is within Treaty 3, the Between the Lakes Purchase. Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and insured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston, 1964; Lytwyn, 2005). In 1784, under the terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in-part spanning westward from near modern day Niagara-on-the-Lake along the south shore of Lake Ontario to modern day Burlington (Aboriginal Affairs and Northern Development Canada, 2016).

1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the Study Area. A summary is first presented of the current understanding of the Indigenous land use of the Study Area. This is then followed by a review of the historical Euro-Canadian settlement history.

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 BP, the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (Ellis & Deller, 1990).

Between approximately 10,000-5,500 BP, the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 BP and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 BP, evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2,300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during

which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al., 1990, p. 343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch & Williamson, 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed.

By 1600 CE, the Huron- Wendat communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the Haudenosaunee and the Huron-Wendat were at peace and remained “la nation neutre”. Like the Huron-Wendat, Petun, and Haudenosaunee, the Neutral people were settled village agriculturalists. In the 1640s, the Neutral and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) were decimated by epidemics and ultimately dispersed by the Haudenosaunee. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. By the 1690s however, the Anishinaabeg were the only communities with a permanent presence in southern Ontario. From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there was no interruption to Anishinaabeg control and use of southern Ontario.

1.2.2 Post-Contact Settlement

Historically, the study area is located in the Township of Guelph, County of Wellington.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the Ontario Heritage Act or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Township of Guelph

Guelph Township is named after the Royal House of Brunswick, family of the English monarch, George IV. Guelph Township was surveyed by John MacDonald in 1830 and the land in the township was purchased by the Canada

Company, which consisted of a group of British speculators who acquired more than two million acres of land in Upper Canada for colonization purposes (Mika and Mika 1981:186). A large number of settlers arrived in the township before it was surveyed. The first settler in the township was Samuel Rife, who squatted near the western limits of the township around the year 1825.

Waterloo Road, formerly Broad Road, was built by Absalom Shade and was finished around 1827, the year the Town of Guelph was founded (Mika and Mika 1981:186). Many settlers arrived in the township between the years 1827 and 1830.

City of Guelph

While the present boundaries for the City of Guelph fall within the former Townships of Puslinch and Guelph, the historic community of Guelph was situated on the River Speed in Guelph Township. Guelph was first laid out by a novelist named John Galt, head of the Canada Company, in 1827. The original plan for the town depicted lots reserved for the company offices, a saw mill, a market square, two churches and a burial ground. Registered plans of subdivision for this village date from 1847-1865. The first settlers were attracted here in the next few years. By the late 1840s, the population of Guelph had reached 1,480, and it was incorporated as a town in 1850. It was also selected as the capital of Wellington County, and it was also deemed to be an inland port of entry. The population had reached 6, 878 by 1873. By April 1879, the population exceeded 10,000 and Guelph was incorporated as a city. Guelph contained a wide variety of trades and professions by the 1840s (see Johnson 1977:83). By the 1870s, Guelph contained churches, banks, insurance agencies, a library, two newspapers, telegraph offices, hotels, stores, flour, saw, and planing mills, woollen factories, foundries, machinery works, sewing machine works, musical instrument manufacturers, tanneries, soap and candle factories, shoemakers, wooden ware manufacturers, and two breweries. It was a station for both the Grand Trunk and Canadian Pacific Railways. Guelph was built on a number of hills which gives it a picturesque appearance, and a number of fine heritage structures in the city were built out of native limestone (Cameron 1967; Crossby

1873:134; Fischer and Harris 2007:132; Rayburn 1997:145; Scott 1997:94-95; Winearls 1991:680-684).

Public Burying Ground

Established in 1827, the Public Burying Ground was a triangular shaped lot near the intersection of Baker Street and Chapel Lane used primarily as an all-faith cemetery. The Public Burying Ground closed 1853, after the Town of Guelph passed the Bylaw 33 prohibiting any further human burials in the cemetery, and other cemeteries within the town limits (Cooke, 1977). There are no known records of individuals interred in the cemetery but based on Woodland Memorial Park records and the population at the time, approximately 200 individuals are believed to be buried within the cemetery. A large portion of the burials and monuments have been reinterred in Woodland Memorial Park. The Public Burying Ground formally closed in 1879 when the property was established as a public park.

Grand Trunk Railway

The Grand Trunk Railway Company of Canada was incorporated by the Canadian government in 1852 and was planned to connect Toronto to Montreal. It began in 1853 by purchasing five existing railways: the St. Lawrence and Atlantic Railroad Company, the Quebec and Richmond Railroad Company, the Toronto and Guelph Railroad Company, the Grand Junction Railroad Company, and the Grand Trunk Railway Company of Canada East. By 1853, the Toronto and Guelph Railroad Company had already begun construction of its line. After its merge with the Grand Trunk Railway Company, the line was redirected from its original route and extended to Sarnia to be a hub for Chicago bound traffic. By 1856 the line had been built from Montreal to Sarnia via Toronto. The company fell into great debt in 1861 and while it was saved from bankruptcy by the Canadian government, in 1919 the company was bankrupt following its expansion west in an attempt to compete with the Canadian Pacific and Canadian Northern Railways (Library and Archives Canada, 2005).

Guelph Junction Railway

In 1884, the Guelph Junction Railway (GJR) began construction on a rail line to connect from south of the Grand Trunk Railway in Guelph with the Credit Valley Railway (later Canadian Pacific Railway) near Campbellville. At the time, the only railway operating out of Guelph was the Great Western Railway (later Grand Trunk Railway). The population of Guelph was concerned that rates and service could be improved by removing the GTR monopoly. Work commenced on the line by the fall of 1886, with the company agreeing to lease the line to Canadian Pacific upon completion, and the line opened in September 1888. The new junction point with the former CVR tracks became known as Guelph Junction (Hughes, 1997).

1.2.3 Map Review

The 1827 Plan of the Town of Guelf (*Plan of the Town of Guelf, Upper Canada, Founded by the Canada Company 1827*, 1827), 1861 Map of Wellington County (Leslie & Wheelock, 1861), and 1872 Aerial Plan of Guelph (Brosius, 1872) were examined to determine the presence of historical features within the study area during the nineteenth century (Figures 2 to 4). Historically, the Study Area is located in the Township of Guelph, County of Wellington.

It should be noted, however, that not all features of interest were mapped systematically in historical maps. For instance, historical atlas maps were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. The use of historical map sources to reconstruct or predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results of this exercise can often be imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

The 1827 Plan of the Town of Guelf (sic) (Figure 2) shows the initial town layout along the southern bank of the Speed River. The street and lotting pattern within the study area radiates outward from an apex at the bend in the Speed River. This resulted in an irregular, radial street pattern within downtown Guelph. South of the downtown area, the lots follow a standard grid pattern. Features shown on the plan include a bridge over the Speed River at the bend (at location of present day Arthur Street bridge), St. Patrick's Church, St. George's Church, a General Burying Ground, a market building and grounds, and a sawmill. Roads to Woolwich, Eramosa and York are noted.

The 1861 Map of Wellington County (Figure 3) shows the streets with much the same layout as the 1827 Plan, with the area subdivided into town lots. The development of the community is evident, with the addition of a Court House, the construction of a Scotch Church on the market grounds, and the construction of the GTR passing through the market grounds at the southern edge of the study area. A pass station is located north of the market grounds.

The 1872 Aerial Plan of Guelph (Figure 4) shows Guelph as a bustling city, with numerous features that remain today, including Old City Hall, St. George's Square, St. Andrew's Presbyterian Church, First Baptist Church, and bridge crossings at Macdonell Street, Eramosa Road and Norwich Street East. Guelph's commercial centre is contained within the study area, with commercial blocks illustrated that are still extant today. Industrial properties are sited along the riverbanks. Residential areas are found around the edges of the study area, and residential growth is visible in all directions surrounding the study area.

In addition to nineteenth-century mapping, historical topographic mapping, and aerial photographs from the twentieth century were examined. This report presents maps and aerial photographs from 1906, 1935, 1955, 1975, and 2021(Figure 5 to Figure 9). These do not represent the full range of maps consulted for the purpose of this study but were judged to cover the full range of land uses that occurred in the area during this period.

The 1906 Illustrated Historical Atlas map of Guelph (Figure 5) depicts a limited number of features but shows the GJR line running along the northern edge of the study area, on the southern bank of the Speed River, with a CPR station

located on McDonnell Street north of the GTR station. The route of the Guelph Radial Railway is also depicted running through the study area. A post office is located on St. George's Square. Development is depicted in all directions surrounding the study area. McDonnell, Norfolk, Suffolk Streets and Eramosa Road are highlighted as major routes providing access into the city core. Additional bridge crossings over the Speed River are depicted east of the study area.

The 1935 topographic map (Figure 6) depicts limited additional features within the study area, but identifies the railway lines, numerous churches and the post office, and the Heffernan Street footbridge. Norfolk Street (Highway 6) is depicted as a paved road.

The 1955 aerial photograph of Guelph (Figure 7) depicts a fully developed downtown core within the study area with dense street walls along the commercial streets. The original radial street layout is largely intact. St. George's Square is a prominent feature, as is the property containing the Basilica of Our Lady Immaculate near the southern corner of the study area. The surrounding residential areas have extensive tree cover.

The 1975 National Topographic System (Figure 8) map depicts a number of key features within the study area, including Old City Hall, a Court House, churches, a dam at the northern corner of the study area, the train station at the northeastern corner of Carden and Wyndham Streets. Both major rail lines are depicted but the Guelph Radial Railway has been removed. Wyndham Street is identified as forming part of Highway 24.

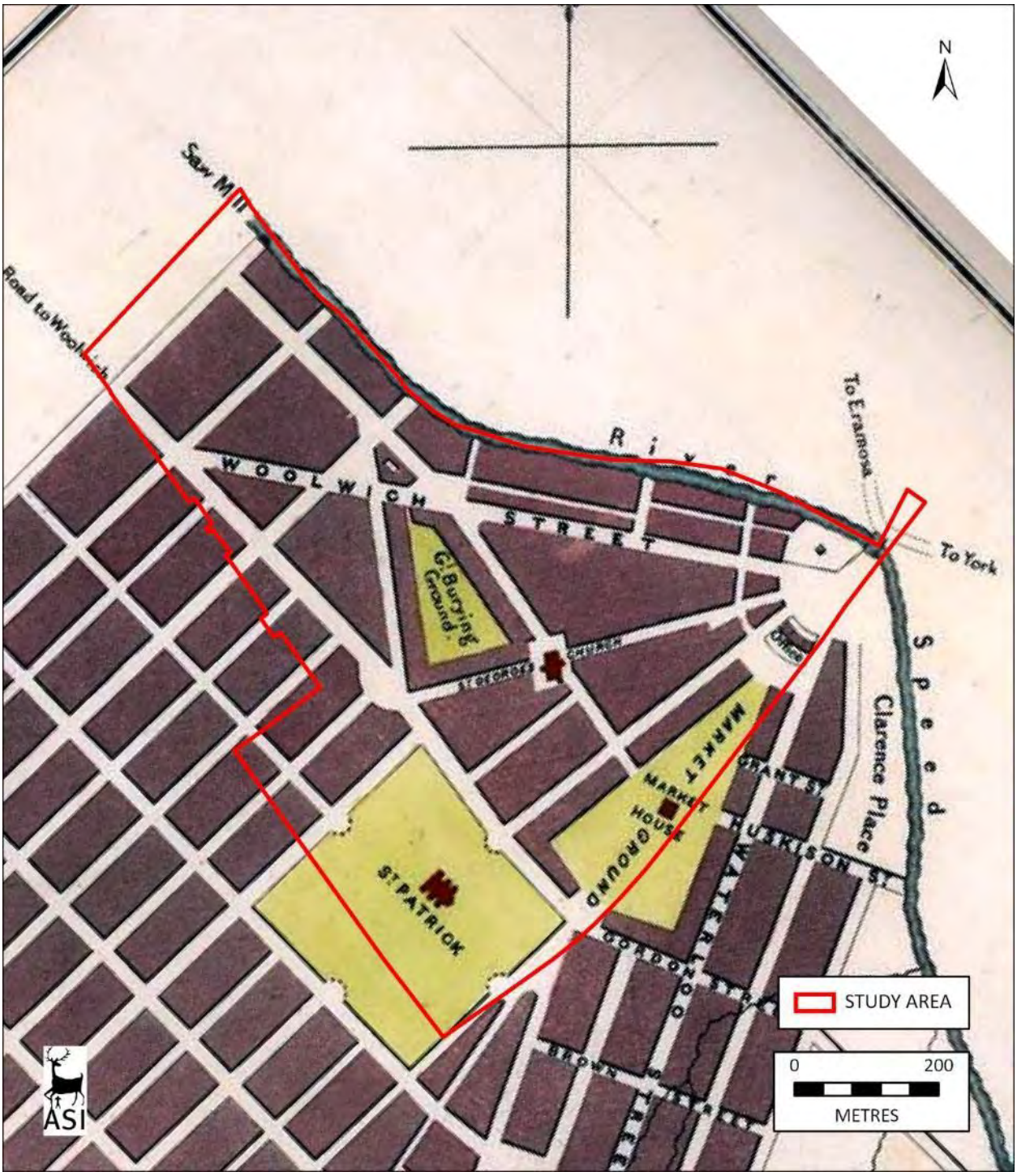

Figure 2: The study area overlaid on the 1827 Plan of the Town of Guelf (sic) (Base map: Anon 1827)

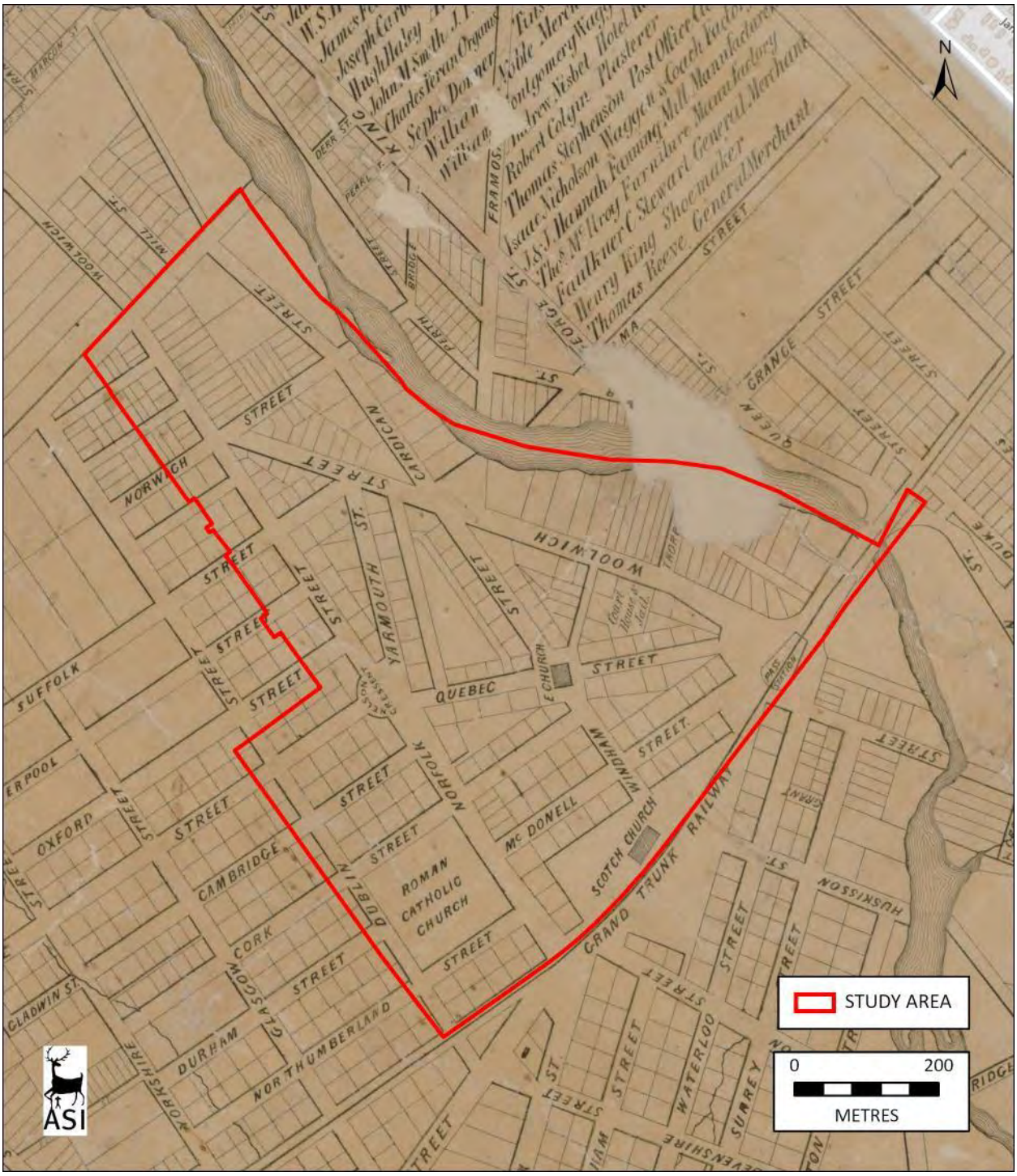

Figure 3: The study area overlaid on the 1861 Map of Wellington County (Base Map: Leslie and Wheelock 1861)

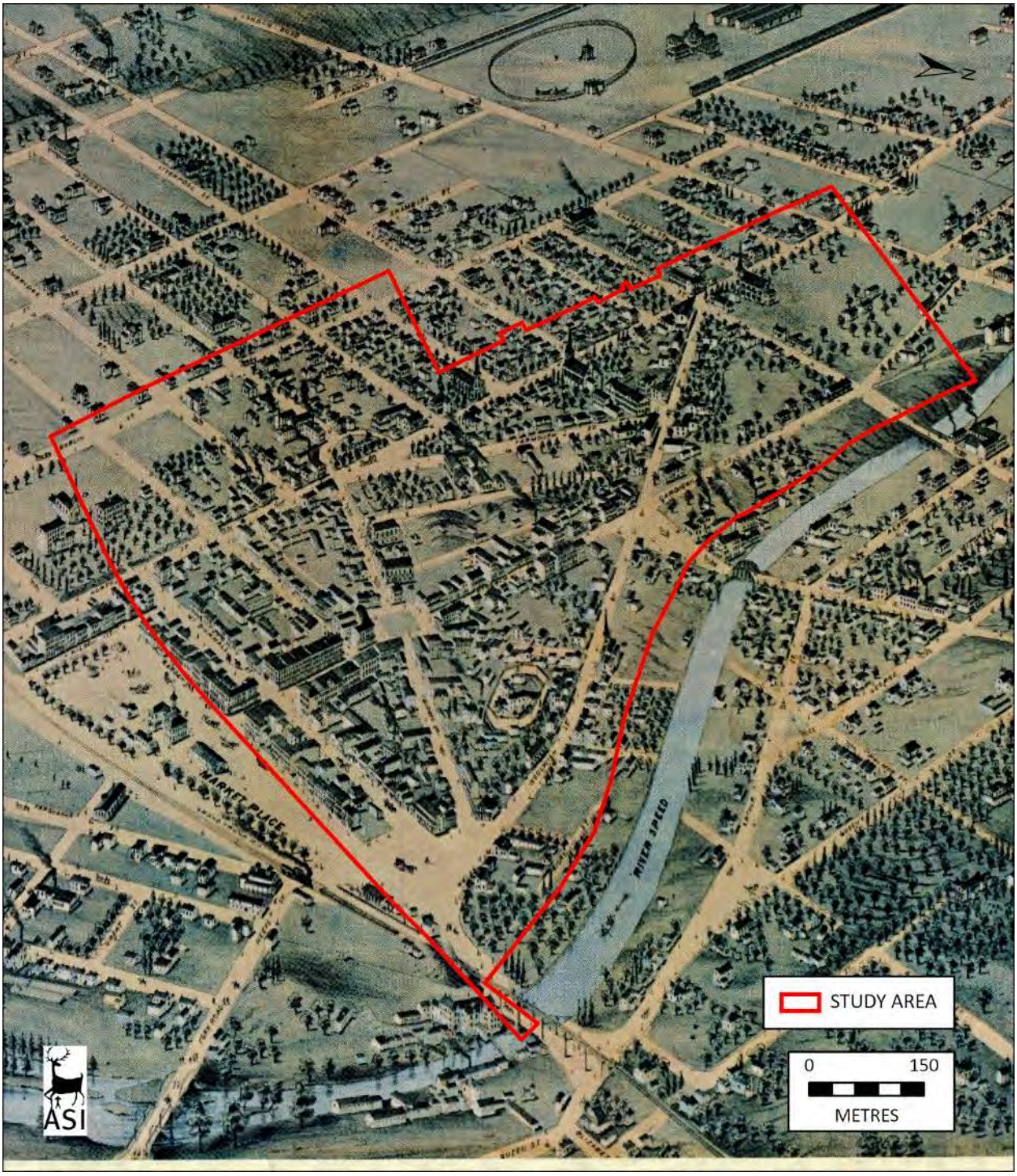

Figure 4: The study area overlaid on the 1872 Aerial Plan of Guelph (Base Map: Brosius 1872)

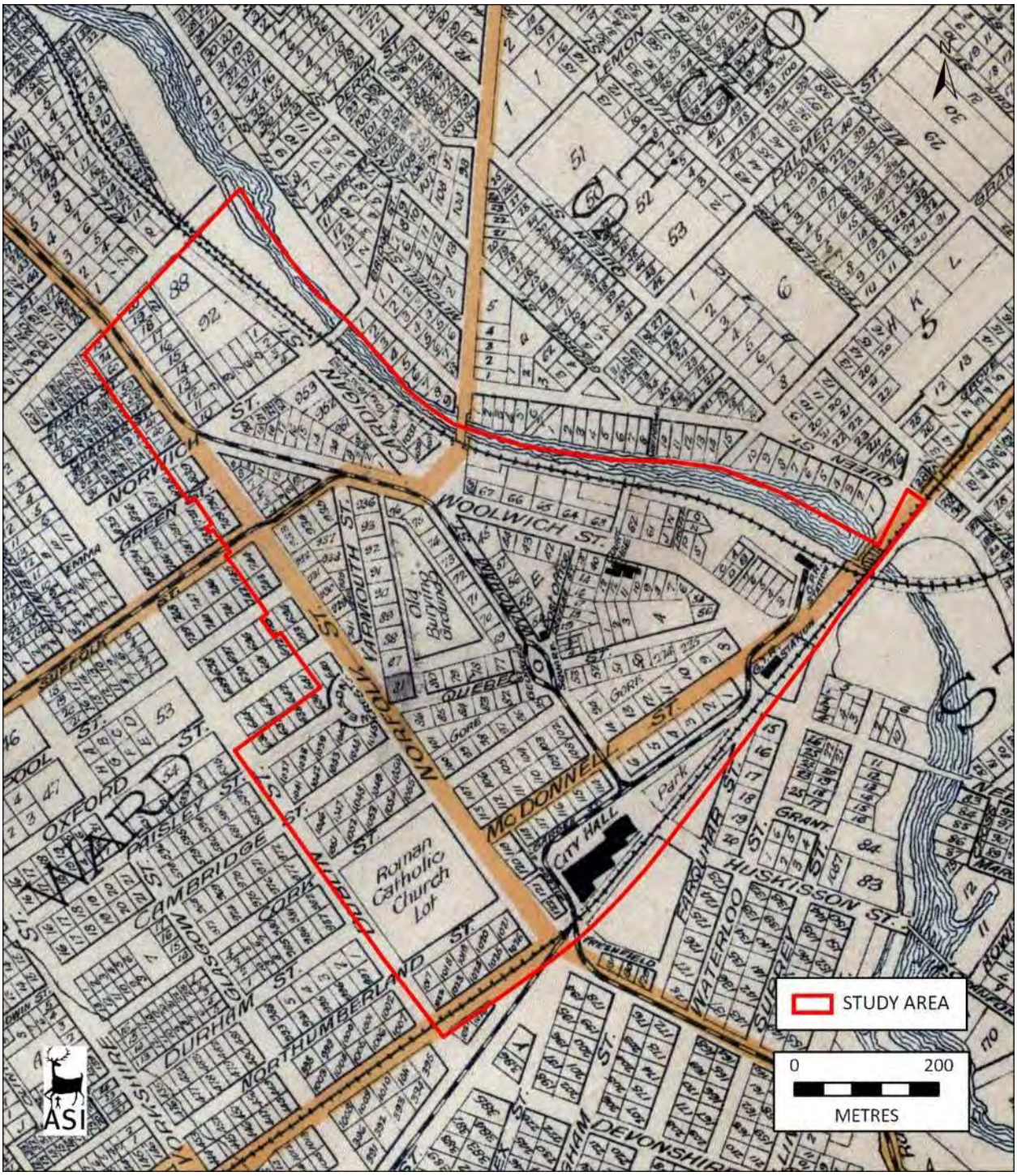

Figure 5: The study area overlaid on the 1906 Illustrated Historical Atlas detail map of Guelph (Base Map: Historical Atlas Publishing Co. 1906)

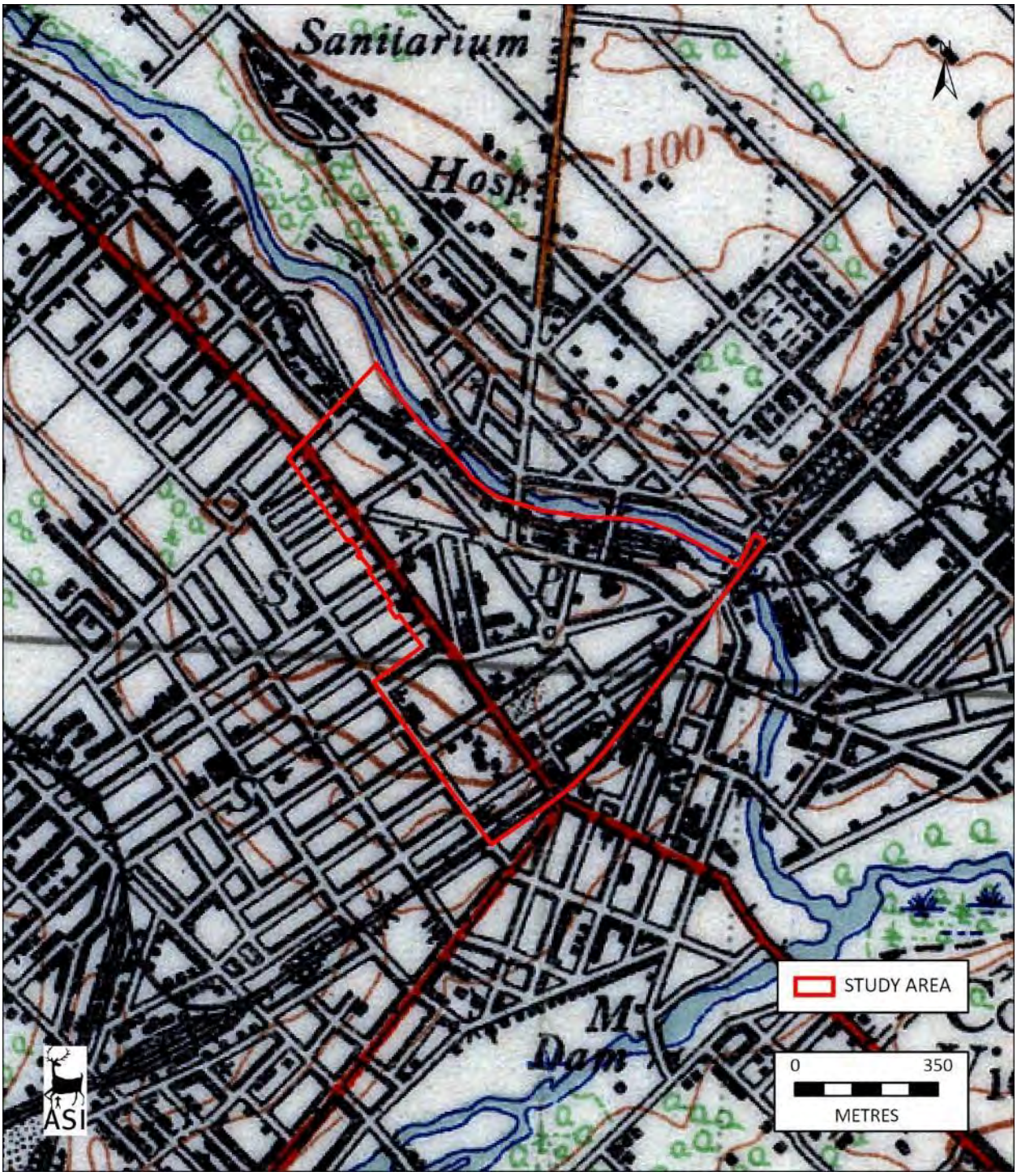

Figure 6: The study area overlaid on the 1935 topographic map of Guelph Base Map: Department of National Defence 1935)

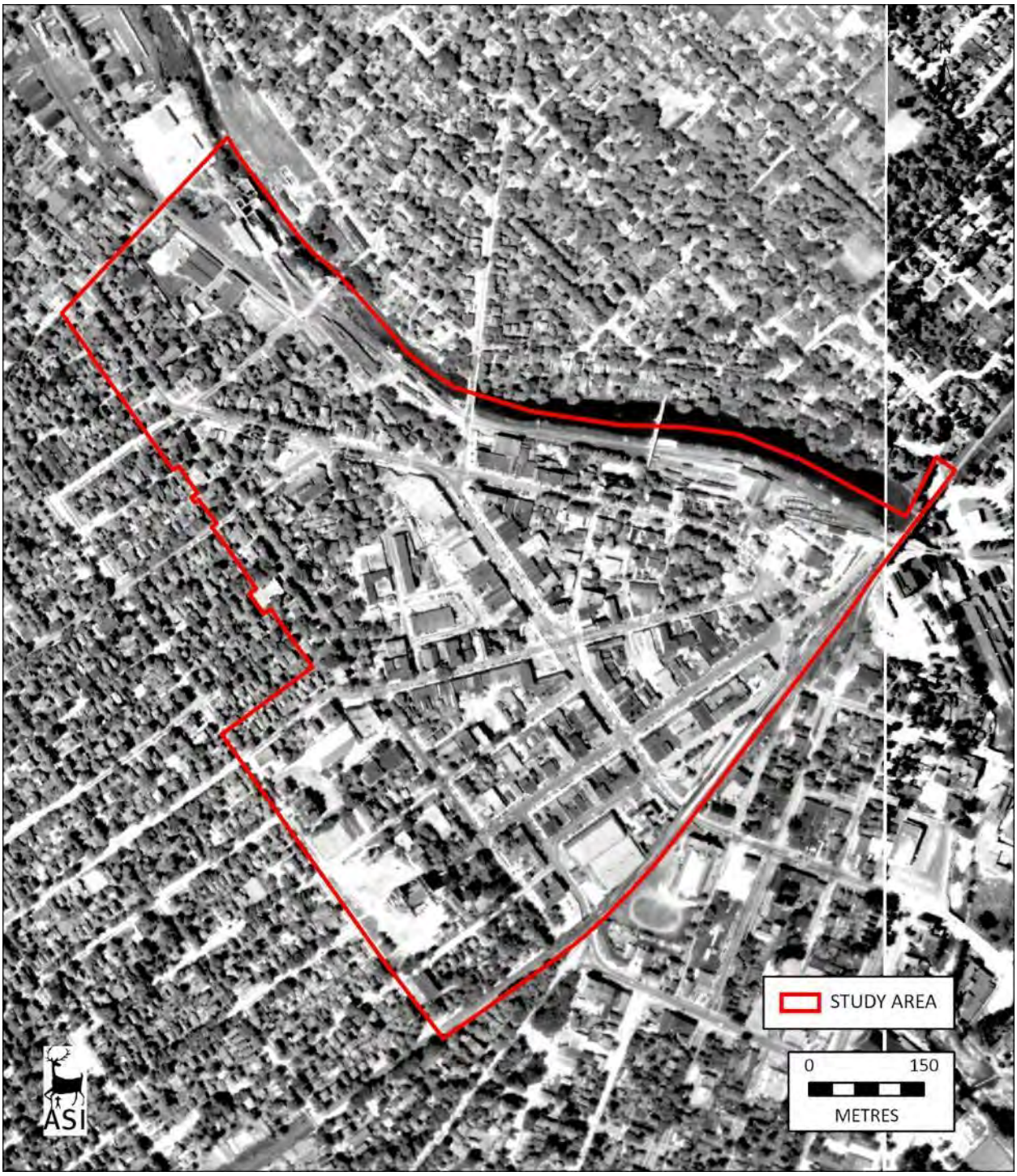

Figure 7: The study area overlaid on the 1955 aerial photograph of Guelph (Base Map: Anon 1955)

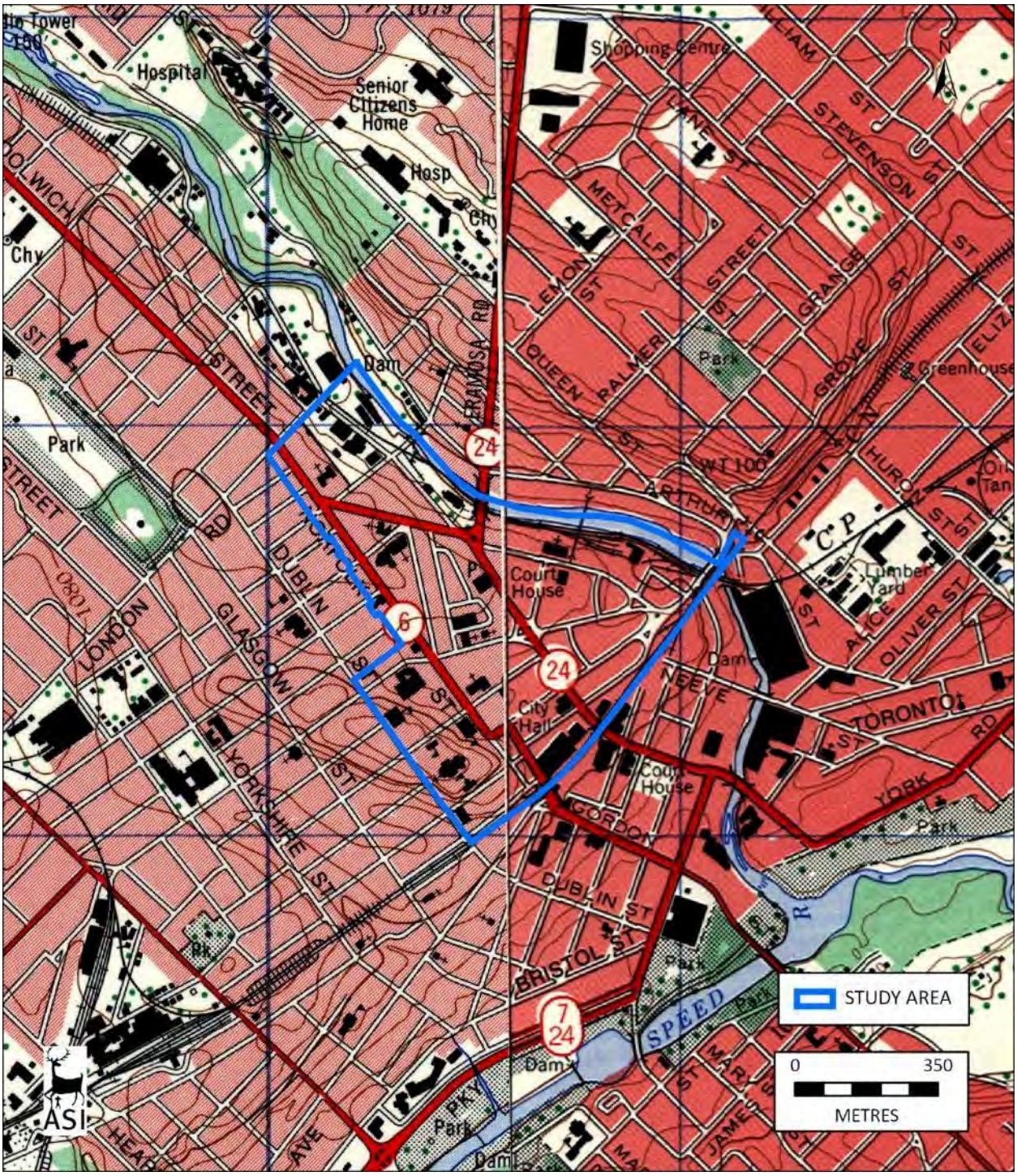

Figure 8: The study area overlaid on the 1975 topographic map of Guelph (Base map: Department of Energy, Mines and Resources 1975)

Figure 9: The study area overlaid on a 2021 aerial image of the City of Guelph (Basemap: Google 2021)

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MHSTCI through "Ontario's Past Portal"; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

The study area functions as the City of Guelph's downtown core and retains many historical features mentioned in the mapping review above. Notable changes include the construction of the Old Quebec Street shopping mall, the Sleeman Centre on Woolwich Street, and a new City Hall south of Old City Hall. Woolwich Street has been realigned where it meets MacDonell Street.

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow & Warner, 1990, p. Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including; food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

The Study Area is situated within the Spillways of the Guelph Drumlin Field physiographic region of southern Ontario which centres upon the City of Guelph and Guelph Township and occupies roughly 830 square kilometres (Chapman and Putnam 1984:137-139). Within the Guelph Drumlin Field, there are approximately 300 drumlins of varying sizes. For the most part these hills are of the broad oval type with slopes less steep than those of the Peterborough drumlins and are not as closely grouped as those in some other areas. The till in these drumlins is loamy and calcareous derived mostly from dolostone of the Amabel Formation that can be found exposed below the Niagara Escarpment. Spillways are the former glacial meltwater channels. They are often found in association with moraines but in opposition are entrenched rather than elevated landforms. They are often, though not always, occupied by stream courses, the fact of which raises the debate of their glacial origin. Spillways are typically broad troughs floored wholly or in part by gravel beds and are typically vegetated by cedar swamps in the lowest beds (Chapman and Putnam 1984:15).

The surficial geology of the Study Area is stone-poor, sandy silt to silty sand-texture till on Paleozoic terrain, Glaciofluvial deposits, and Paleozoic bedrock. Soils within the Study Area consist of Guelph loam, Burford loam and Brisbane loam all with good drainage (Ontario Geological Survey, 2010).

The Study Area is located in proximity to the Speed River. The Speed River flows through old spillway through its entire length and as a watercourse is representative of the late Pleistocene/early Holocene geography of southern Ontario. From headwaters to its confluence with the Grand River, the Speed River descends approximately 500 feet of elevation across only approximately 40 km. The Speed River is unexpectedly shallow as it is partly floored by bedrock (Chapman and Putnam 1984: 98). The Speed River is a tributary of the Grand River. The Grand River watershed is the largest watershed in southern Ontario at 6,800 square kilometres including the cities of Brantford, Cambridge, Guelph, Kitchener, and Waterloo. The Grand River includes all the land drained by the Grand River and its tributaries. It begins in Dufferin County in the Dufferin Highlands and travels south 310 kilometres before emptying into Lake Erie at Port Maitland. The Conestogo, Nith, Speed and Eramosa rivers are the major four which feed into the Grand. Roughly 70% of the watershed is made of intensive agricultural areas (GRCA, 2020).

1.3.3 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MHSTCI. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *AjHb.*

According to the OASD, five previously registered archaeological sites are located within one kilometre of the Study Area, one of which (AjHb-71) is located within the Study Area and has been noted to have further cultural

heritage value or interest (MHSTCI, 2021). A summary of the sites is provided below in Table 1.

Table 1: Registered Sites within One Kilometre of the Study Area

Borden number	Site Name	Temporal/ Cultural Affiliation	Site type	Researcher
AjHb-37		Euro-Canadian	Homestead	Crinnion 1996
AjHb-71	**Baker Street**	**Euro-Canadian**	**Other: industrial, commercial, cemetery**	**Pearce 1963, Neil 1970, D.R Poulton & Associates Inc. 2006;2007; 2012, Stantec Consulting 2016, ARA 2019**
AjHb-83		Euro-Canadian	House	Detritus Consulting 2016
AjHb-84		Euro-Canadian	Agricultural	Detritus Consulting 2014
AjHb-93		Euro-Canadian	Residential	Detritus Consulting 2016

1.3.4 Previous Archaeological Assessments

According to the background research, seven previous report details fieldwork within 50 metres of the Study Area. Parts of the Study Area which have been previously assessed and cleared of archaeological concern do not require further work. Other areas have outstanding archaeological requirements, including the former Public Burying Ground (see Figure 10).

(ASI, 2016) Stage 1 Archaeological Assessment Wilson Street Reconstruction Lots 118-122, 131 and Market Place, St. Andrews Ward, Former Township of Guelph, County of Wellington, City of Guelph, Regional Municipality of Waterloo, Ontario [P128-0138-2016]

The assessment overlaps the current Study Area and involved road and municipal servicing improvements for Woolwich Street from University Avenue to Bridle Trail, the design-build for the new Wilson Street Parking Garage, and the reconstruction of Wilson Street from Gordon/Norfolk Street to Macdonell Street. The property inspection revealed that the Study Area had been previously disturbed and required no further archaeological assessment.

(ASI, 2017) Stage 1 Archaeological Assessment The Ward to Downtown Bridges Part of Lot 2, Broken Front Division F and the Town of Guelph, Former Township of Guelph, City of Guelph, County of Wellington, Ontario [P094-0213-2016]

The project area adjacent to the current Study Area was bounded by Wellington Road on the west, Wellington Street Rail Bridge on the north, Arthur Street on the east and Neeve Street to the south. The assessment determined that parts of the project area be subject to Stage 2 Archaeological Assessment by test pit survey at five metre intervals. The remainder of the project area did not retain archaeological potential on account of deep and extensive lane disturbances.

D.R. Poulton & Associates Inc 2005 burial investigations at a sink hole on Baker Street (no licensed report available on PastPortal)

A letter to the Cemeteries Regulation Unit Registrar dated 2005 outlines the findings of the Baker Street Burial in the City of Guelph, which was identified after a sink hole opened up in the street. The letter summarising the findings of the investigations from Friday October 14, 2005. The grave discovered by City staff last week was roughly oriented east-west, with the eastern half only being within the road pavement itself. Soil was screened through six millimeter mesh which recovered small bones. No evidence of coffin wood or hardware was present, suggesting that it was an unmarked grave that was overlooked during any relocation of bodies. Evidence of two additional grave shafts was present which were not investigated, all one metre apart under the sidewalk and gutter. Another cultural feature was suggested to be located in the north end of the sinkhole nut was not investigated. The report noted that it is likely any future construction in the area will encounter additional burials. Further excavation was recommended to determine if the apparent feature north of the grave in the sinkhole was indeed a burial, and to determine if the north end of the sink hole has a cultural feature as suggested.

A formal licensing report was not indicated on PastPortal.

(D.R. Poulton & Associates Inc, 2007) The 2006 Stage 3-4 Archaeological Investigations of the Proposed Baker Street Parking Facility, Former Public Burying Ground (AjHb-71) City of Guelph, Ontario [P053-061-2006]

The project area overlaps the current Study Area and included part of the Public Burying Ground, one of the City's first cemeteries established in 1827. The archaeological assessment included excavations of the southern portion of the existing parking lot as well as part of the adjacent Park Lane right-of-way to the east. The excavation covered 0.41 hectares and represented approximately two-thirds of the historic cemetery. The 2006 excavations documented the presence of 11 intact burials and a further 25 grave shafts of burials that have been exhumed in the second half of the nineteenth century. The assessment

recommended that any future land use changes in the downtown core could represent an impact to the unmarked graves in the as-yet unexcavated portion of the Public Burying Ground.

(D.R. Poulton & Associates Inc, 2009) The 2007 – 2008 Stage 1 & 3 Archaeological Assessment of the Proposed Addition to Old City Hall, City of Guelph, Wellington County, Ontario [P053-103-2007 & P053-141-2008]

The project area overlaps the current Study Area and was conducted prior to proposed additions to Old City Hall, located at the southeast corner of the building. The background study determined that no archaeological sites had been documented within proximity to the building, although possible archaeological resources subject to impact from the proposed understand were limited to the potential for undiscovered sites. Test excavations were conducted and confirmed that the area had been disturbed by previous construction. No further archaeological assessment was recommended.

(D.R. Poulton & Associates Inc, 2012) The 2010 Stage 3-4 Archaeological Investigations of Sinkholes in the Baker Street Right-of-Way, Former Public Burying Ground (AjHb-71), City of Guelph, Ontario [P316-046-2010]

Stage 3-4 was triggered within the current Study Area due to the presence of two sinkholes in Baker Street in the former Public Burying Grounds. The 2010 investigations followed after a 2005 investigation of sinkholes on Baker Street (see above) and a 2006 Stage 3-4 investigation of the proposed multi-story Baker Street Parking Facility (see above P053-061-2006). The 2010 sinkhole opened up adjacent to the sidewalk on the west side of Baker Street, a two-lane road in downtown Guelph. The archaeological assessment identified a small grave shaft that had been previously exhumed sometimes in the second half of the nineteenth century.

(D.R. Poulton & Associates Inc, 2013) The 2012 Archaeological Monitoring of the Demolition & Site Servicing for 160-164 and 152-158 Wyndham Street North, Part of Lots 74 & 73, Canada Company Survey, City of Guelph, Wellington County, Ontario [P242-009-2012]

Located within the current Study Area at 160-164 and 152-158 Wyndham Street North, the demolition was proposed in order to build the Guelph Public Library. There was potential that the demolition and construction could impact the former Public Burying Ground and unmarked human graves. The assessment involved excavation of 1.2-metre-wide trench along the exterior of the buildings, and archaeological monitoring of the upgrading of a sanitary sewer. The alignment of the sewer extended west across Chapel Lane and into the northeast edge of the existing Baker Street parking lot. The assessment did not recover any human remains or artifacts related to the Public Burying Ground. The assessment recommended that any further construction activity in the area should require an archaeological assessment or archaeological monitoring.

(Stantec Consulting Ltd., 2018) Stage 3 Archaeological Assessment: Baker Street Investigations, Former Public Burying Ground (AjHb-71), city of Guelph, Ontario [P083-0301-2016]

The assessment was undertaken within the current Study Area after human remains were discovered underneath a paved surface of Baker Street, resulting in the recovery of 78 artifacts and 47 fragments of human remains. Based on previous discoveries of human remains in the area and in association with former Public Burying Ground (AjHb-71), archaeological monitoring was conducted. No additional archaeological assessment was recommended.

2.0 Analysis and Conclusions

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. Results of the analysis of the Study Area property inspection and background research are presented in Section 3.1.

2.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (See Table 2, Public Burying Ground);
- Water sources: primary, secondary, or past water source (Speed River, Grand River Watershed);
- Early historic transportation routes (Grand Trunk Railway, McDonnel Street, Norfolk Street, Woolwich Street);
- Proximity to early settlements (City of Guelph) and
- Well-drained soils (Guelph, Burford, Brisbane loams)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Municipal Heritage Register was consulted and 26 properties are designated under Part IV of the *Ontario Heritage Act* and 180 properties are listed on the City's Municipal Heritage Register.

These criteria are indicative of potential for the identification of archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

2.1 Conclusions

ASI will undertake a comprehensive Stage 1 assessment, including a detailed property inspection once preferred alternatives have been identified for the Project. The Stage 1 report will identify what areas require further assessment and by what methodology they must be surveyed, as per the 2011 Standards and Guidelines for Consultant Archaeologists (S & G), administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (M.H.S.T.C.I 2011).

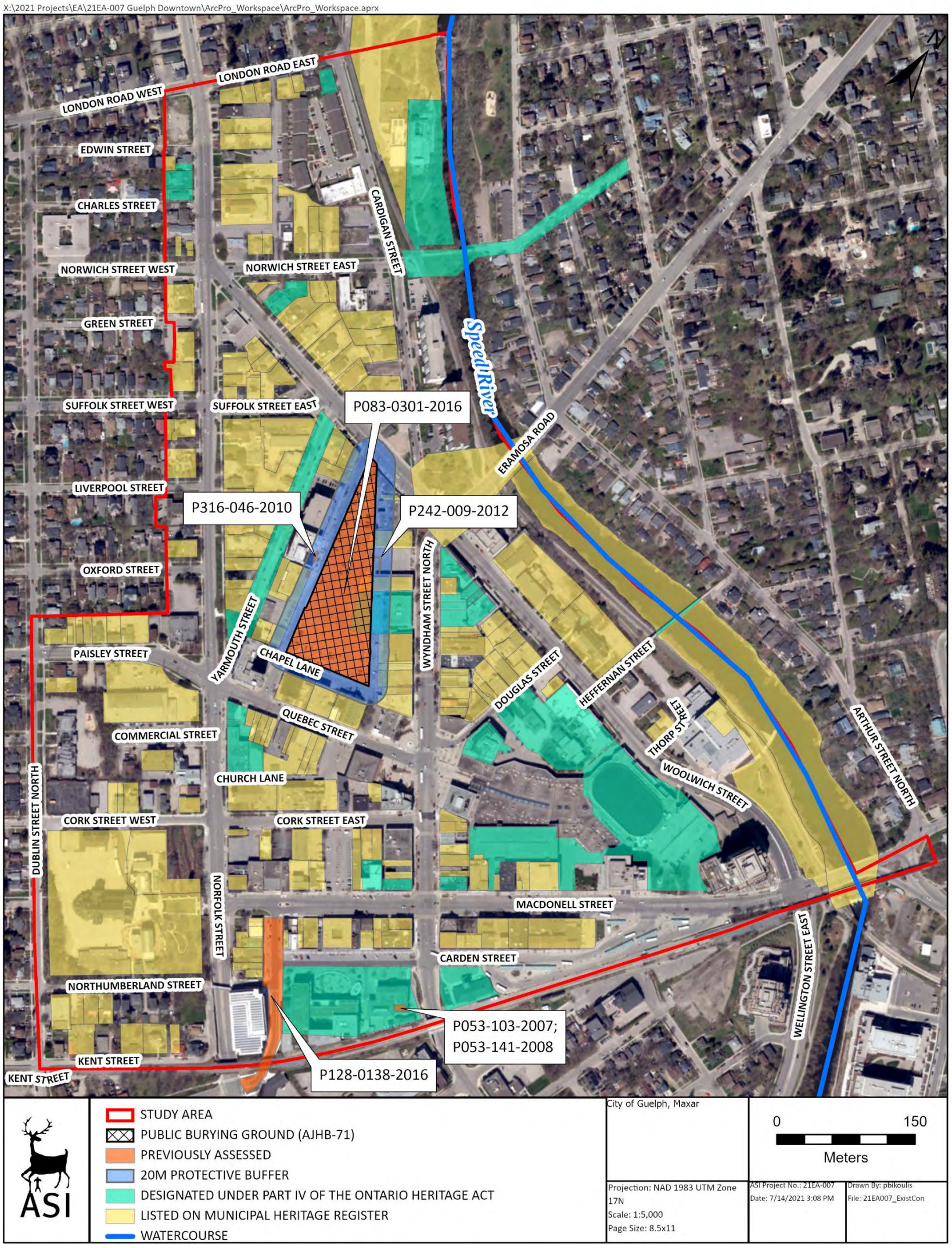

Figure 10 Archaeological Existing Conditions

3.0 Legislation Compliance Advice

ASI advises compliance with the following legislation:

- This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, RSO 2005, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological field work and report recommendations ensure the conservation, preservation, and protection of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological field work on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the Ontario Heritage Act.

- Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.

- The Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site

shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the Ontario Heritage Act and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.

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APPENDIX 4

EXISTING TRAFFIC AND TRANSPORTATION CONDITIONS MEMORANDUM

Downtown Infrastructure Revitalization Program

Part B Wyndham Street Class EA

Existing Traffic and Transportation Conditions Memorandum

Draft

Prepared for:
City of Guelph

RVA 215632

April 14, 2022

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April 13, 2022 RVA 215632

City of Guelph
Guelph City Hall
1 Carden Street Guelph, ON
N1H 3A1

Attention: David Di Pietro, P.Eng., Project Engineer

Dear Mr. Di Pietro:

Re: Downtown Revitalization Program – Part B - Wyndham Street Class EA
Existing Traffic and Transportation Conditions Memorandum

R.V. Anderson Associates Limited (RVA) was retained by the City of Guelph (City) to undertake an Environmental Assessment (EA) for the Wyndham Street corridor, from Woolwich Street to Carden Street, to facilitate the City's proposed Downtown Infrastructure Revitalization Program and related work.

RVA is pleased to submit herein our Existing Traffic and Transportation Conditions Memorandum, the findings of which will assist the project team in identifying opportunities to improve the Wyndham Street corridor and develop potential alternatives for further evaluation.

If there is any query related to this report, please feel free to contact the undersigned at 905-818-2542 or by email at AMildenberger@rvanderson.com.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED

Adam Mildenberger, B.A., C.E.T.
Transportation Planner

Nick Palomba, P.Eng.
Manager, Transportation

Encls.

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EXECUTIVE SUMMARY

As part of the Municipal Class Environmental Assessment (EA) that R. V. Anderson Associates Limited (RVA) is undertaking for the Wyndham Street North corridor, RVA has completed this Existing Traffic and Transportation Conditions Memorandum which reviewed the existing active transportation and transit facilities, collisions, and the existing and future (2051) do-nothing intersection operations along the corridor from Woolwich Street in the north to Carden Street in the south.

Wyndham Street is classified as a downtown main street corridor vital to the accessibility, local economy, and placemaking of Downtown Guelph. Wyndham Street is an important transportation and infrastructure corridor, but it is also home to one of Ontario's most valued heritage streetscapes. The majority of Wyndham Street has an urban 4-lane cross section (two lanes per direction), and parallel on-street parking is located throughout the corridor. As outlined in the City's updated Transportation Master Plan, Wyndham Street is included within the Pedestrian Priority Network and is identified as a part of the Spine Cycling Network, Quality Transit Network and Resilience Network corresponding with the City's preferred transportation direction, Alternative #3 – *Sustainability + Resilience*.

Existing pedestrian facilities within the corridor consist of sidewalks along both sides of the street throughout the entire study area. In addition, there are two signalized pedestrian crossings within the midblock section of Woolwich Street and Douglas Street located at 112 and 146 Wyndham Street North.

Wyndham Street is currently designated as an "on-road" cycling facility and regulatory signage is located along the corridor restricting cyclists from travelling along the sidewalks. South of Carden Street, Wyndham Street currently contains dedicated cycling lanes on both sides of the roadway.

There are several Guelph Transit bus routes which service the study area corridor including routes which also travel along Quebec Street and Macdonell Street. Currently there are three bus stops for Guelph Transit routes located in and around the intersection of Quebec Street and Wyndham Street North.

Guelph Central Station is a significant transportation hub for the City and is located at the southern edge of the study area along Carden Street. In addition to providing stops for Guelph Transit bus routes, the station also services GO transit (bus and rail), Via Rail and more recently, Flixbus services.

Existing intersection capacity analysis completed for the study area signalized and unsignalized intersections, indicates that all intersections are currently operating satisfactorily with no critical movements during the weekday a.m., p.m., and Saturday

midday peak hours. Under the future (2051) horizon year do-nothing scenario the analysis indicates that all intersections continue to operate within the capacity of the existing roadway geometry. Of note, the intersections of Wyndham Street North with Woolwich Street and Wyndham Street North with Macdonell Street have several movements during the pm peak hour which would be approaching capacity and require geometric enhancements beyond 2051 horizon year.

A review of historical collision data from 2016 to 2020 for the corridor revealed a total of 131 collisions of which 82 occurred at intersections and 49 within the midblock sections. There were not fatal injury collisions were reported within the 5 years of historical data.

Almost half (48%, 39) of the collisions recorded at intersections were classified as property damage only and 11% (9) classified as non-fatal injury. Turning movement collisions were the most predominant collision impact type with 28% (23) followed by rear ends with 22% (18). Potential contributing factors for these collision types include a lack of dedicated left turn lanes at several intersections (i.e., Quebec Street, Macdonell Street, and Cork Street), and the horizontal/vertical alignment on the north/south approaches of Wyndham Street at Woolwich Street.

Within midblock sections, almost half 49% (24) of collisions recorded were classified as property damage only with 6% (3) classified as non-fatal injury. The most predominant collision impact types were SMV accounting for 41% (20) and sideswipes representing 33% (16). Of the single motor vehicle collisions recorded, the majority involved parked vehicles or potentially roadside objects.

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1.0 INTRODUCTION

R.V. Anderson Associates Limited (RVA) was retained by the City of Guelph (City) to undertake an Environmental Assessment (EA) for the Wyndham Street corridor, from Carden Street to Woolwich Street, to facilitate the City's proposed Downtown Infrastructure Revitalization Program and related work.

In support of the EA process, RVA has undertaken this Existing Traffic and Transportation Conditions Assessment. This memorandum summarizes our review of existing active transportation and transit facilities, review of collisions within the study area, and existing intersection operations along the corridor. The findings of this memorandum will assist the project team in determining the most appropriate cross-section for the future Wyndham Street corridor.

Included in this memo is an assessment of intersection operations for a future 30-year horizon (2051) with no roadway improvements, identifying any future needs of the corridor from a traffic perspective which will inform the development of alternative solutions to mitigate identified concerns.

2.0 WYNDHAM STREET STUDY AREA

2.1 Study Area Description

Wyndham Street is a downtown main street corridor vital to the accessibility, local economy, and placemaking of Downtown Guelph. Wyndham Street is one of Guelph's most identifiable and significant streets. It is an important transportation and infrastructure corridor but is also home to one of Ontario's most valued heritage streetscapes. The downtown core is bordered by the Speed River to the north and east sides and by the Eramosa River to the south.

Wyndham Street is one of the principle commercial streets in the downtown core, lined with numerous businesses. At the general midpoint of the corridor, St. George's Square is the main hub of downtown Guelph, located at Wyndham Street and Quebec Street as shown in **Figure 1**. This area features the historic Blacksmiths fountain and other public spaces for the community to gather. Adjacent to Wyndham Street, the Baker Street redevelopment project is proposed to include a new library along with residential and commercial land uses. An aerial of the surrounding lands is shown in **Figure 2**.

Figure 2: St. George's Square

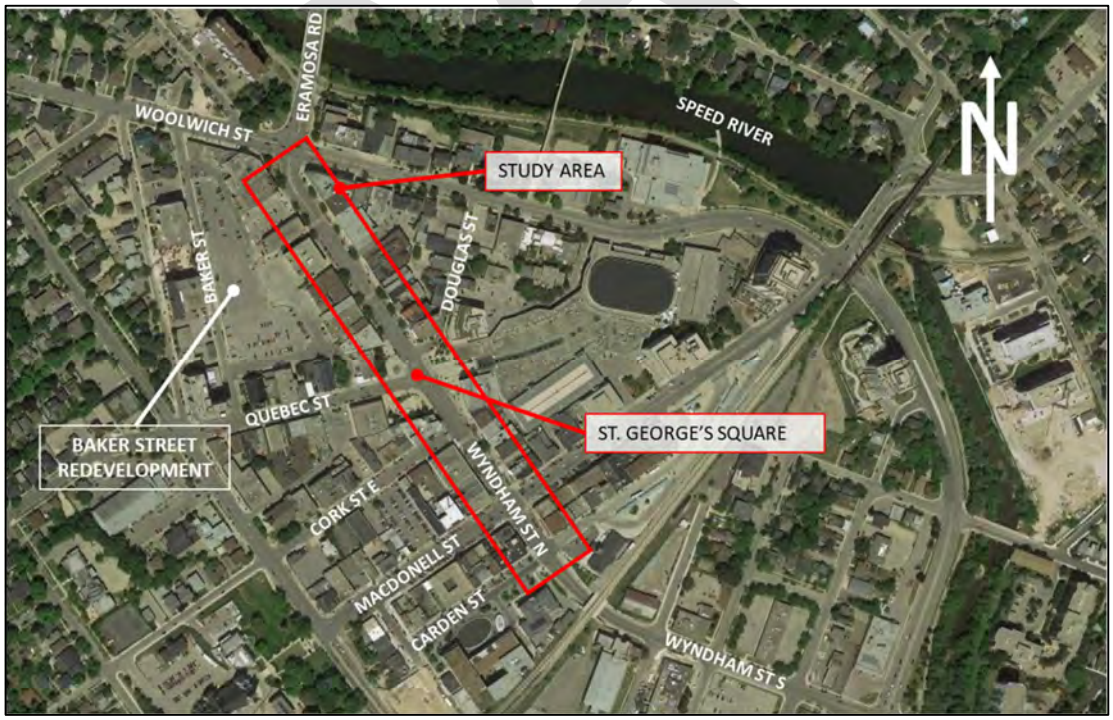


Figure 1: Aerial of Study Area

2.1.1 Placemaking Initiatives

There are several placemaking initiatives which incorporate the closure of sections of Wyndham Street. These include “project safe semester” which typically occurs during the month of September when students return to the University of Guelph. This initiative includes closures of Wyndham Street between Cork Street and Carden Street as well as portions along Macdonell Street between the hours of 10:00 p.m. and 4:00 a.m. This allows restaurants and bars to occupy the roadway and provide patios and dining areas.

No on-street parking is allowed in these areas during this time and extended late night transit service is also offered.

Similariliy, during the months of May through to September, there are weekend (Friday, Saturday, and Sunday) closures of the Wyndham Street and Macdonell Street intersection between 9:00 a.m. to 5:00 a.m. to allow for restaurants/bars to extend their patios into the street. During the week, the patios remain in place and Wyndham Street and Macdonell Street operate as a two-lane roadway (one lane per direction) and on-street parking is eliminated.

2.2 Roadway Classification & Configuration

Wyndham Street North is a north-south oriented road classified as a Downtown Main Street[1] under the jurisdiction of the City of Guelph. Wyndham Street is not permitted as a truck route. Wyndham Street North has an assumed speed of 50 km/h. The road is generally straight within the study area except for the northbound approach to Woolwich Street and the corridor’s vertical alignment is generally level. According to the City’s updated Transportation Master Plan (TMP) and presented within their StoryMaps website entitled *Moving Guelph Forward*, *Alternative #3 – Sustainability + Resilience* is currently the City’s preferred transportation direction. As part of this alternative, Wyndham Street is included within the Pedestrian Priority Network and is identified as a part of the Spine Cycling Network, Quality Transit Network and Resilience Network.

The majority of Wyndham Street North has an urban 4-lane cross section (two lanes per direction) with parallel on-street parking on both sides of the street. South of Cork Street East, the innermost southbound lane transitions into a left-turning auxiliary lane. In the segment between Carden Street and Macdonell Street the northbound approach

[1] *Downtown Main Streets are the main commercial streets within Downtown. While accommodating cars, trucks and bicycles, Downtown Main Streets should be considered pedestrian and transit priority streets. Source: City of Guelph Official Plan, June 2021 Consolidation section 11.1.4.2.3.*

transitions from a single lane to a two-lane cross section while the southbound approach maintains it's single lane with a left-turning auxiliary lane. Curb extensions are located at all crossings. Illumination poles and trees are located in the boulevard along the entire corridor.

Auxiliary turn lanes along Wyndham Street North are located at intersections with Woolwich Street, Macdonell Street, and Carden Street. The south approach at Woolwich Street consists of a left turn auxiliary lane with approximately 30 metres of taper and 25 metres of storage length. The north approach at Macdonell Street consists of a left-turning auxiliary lane with no taper as it transitions from a through lane to a left-turning lane south of Cork Street East. The final auxiliary lane along the corridor is a left-turning lane located at Carden Street in the southbound direction with approximately 30 metres of storage. This lane accommodates vehicles travelling toward Guelph Central Station.

2.3 Active Transportation Facilities

2.3.1 Pedestrians

Pedestrian facilities within the corridor include sidewalk on both sides of the street along the entire corridor in the study area from Woolwich Street to Carden Street.

Pedestrian crossings are located at each intersection along Wyndham Street North. The Carden Street, Macdonell Street, Quebec Street, and Woolwich Street intersections all feature crosswalks at all approaches. The Cork Street East intersection consists of two crosswalks on the south and east approaches. A crosswalk is also located at Douglas Street.

Additional signalized midblock pedestrian crossings are located at 112 Wyndham Street and 146 Wyndham Street North, as shown in **Figure 3**. Curb extensions are located at all crossings except at the Woolwich Street intersection and the Carden Street intersection. The northeast corner of the Carden Street intersection has a curb extension.

Figure 3: 146 Wyndham Street North Midblock Pedestrian Signal (Facing South)

2.3.2 Cycling

Wyndham Street is currently designated as an “on-road” cycling facility and regulatory signage is located along the corridor restricting cyclist from using the sidewalks. Additionally, to the south of Carden Street, Wyndham Street North has paved shoulders dedicated for cyclists.

2.4 Transit Facilities

2.4.1 Guelph Transit

Figure 4 presents the current Guelph Transit routes within the study area as taken from the Guelph Transit Downtown Service Map. There are currently 8 different routes which operate along the Wyndham Street corridor. Servicing those routes are three bus stops which are located at the intersection of Quebec Street and Wyndham Street North as shown in **Figure 5**. On Quebec Street, stop 1001 serves route #10 in the westbound direction. On the south leg, stop 5830 serves route #13 in the northbound direction. In the southbound direction of the south leg, stop 1130 serves routes #3, 10, 11, 12, 13, and 20. All routes at these stops operate on weekdays and weekends.

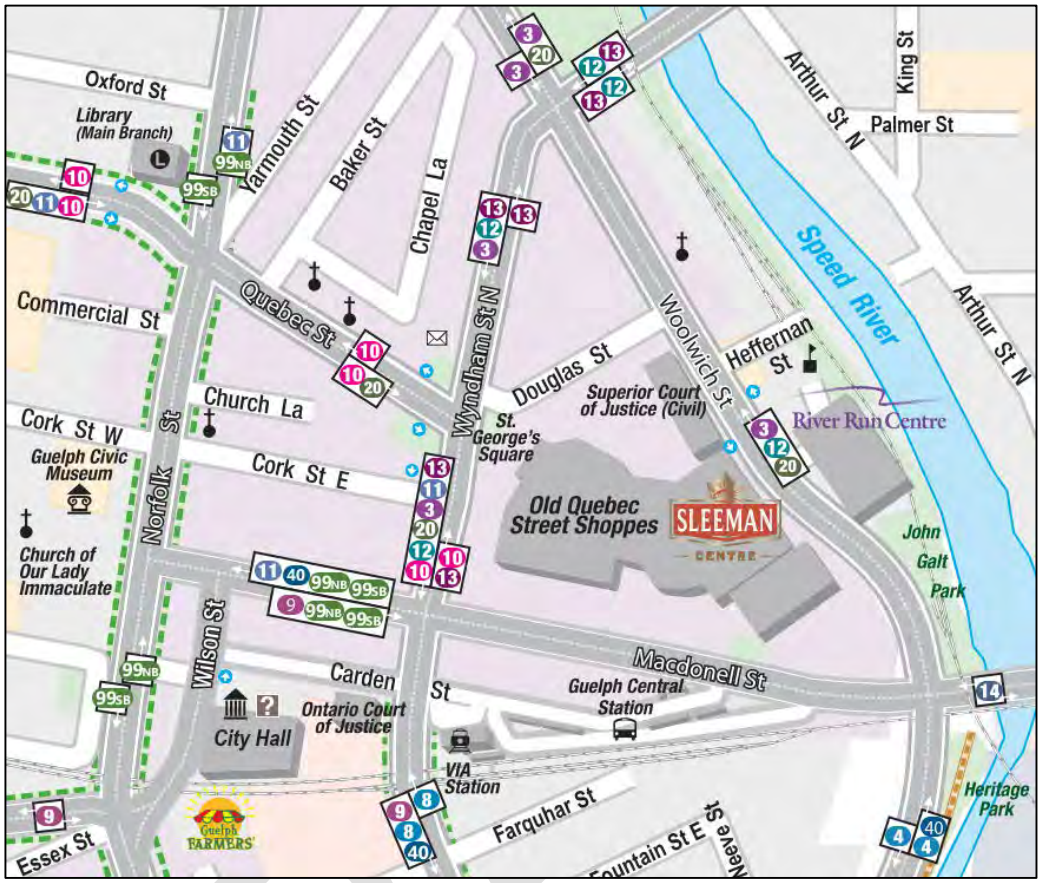


Figure 4: Study Area Transit Routes

Figure 5: Existing Study Area Transit Stops

2.4.2 GO Transit

At the south end of the corridor, located at Carden Street and Wyndham Street is Guelph Central Station, as shown in **Figure 6**. This station serves GO bus route #29, which runs between Guelph and Mississauga traveling south from Guelph Central Station toward the University of Guelph before making its way east to Mississauga. Go bus Routes #30, #31, and #33 also utilize the station running from Kitchener to Toronto. These routes travel east along Macdonell Street through the study area making their way towards Acton and then Toronto with intermediary stops available. A snapshot of the route paths taken from their respective schedule maps are presented in **Figure 7**.

The Kitchener Line of Go Train service, which runs from Kitchener to Toronto with a stop in Guelph at Guelph Central Station, utilizes the elevated train tracks south of Carden Street. The Kitchener Line route map is also presented in **Figure 8**.

Figure 6: Guelph Central Station

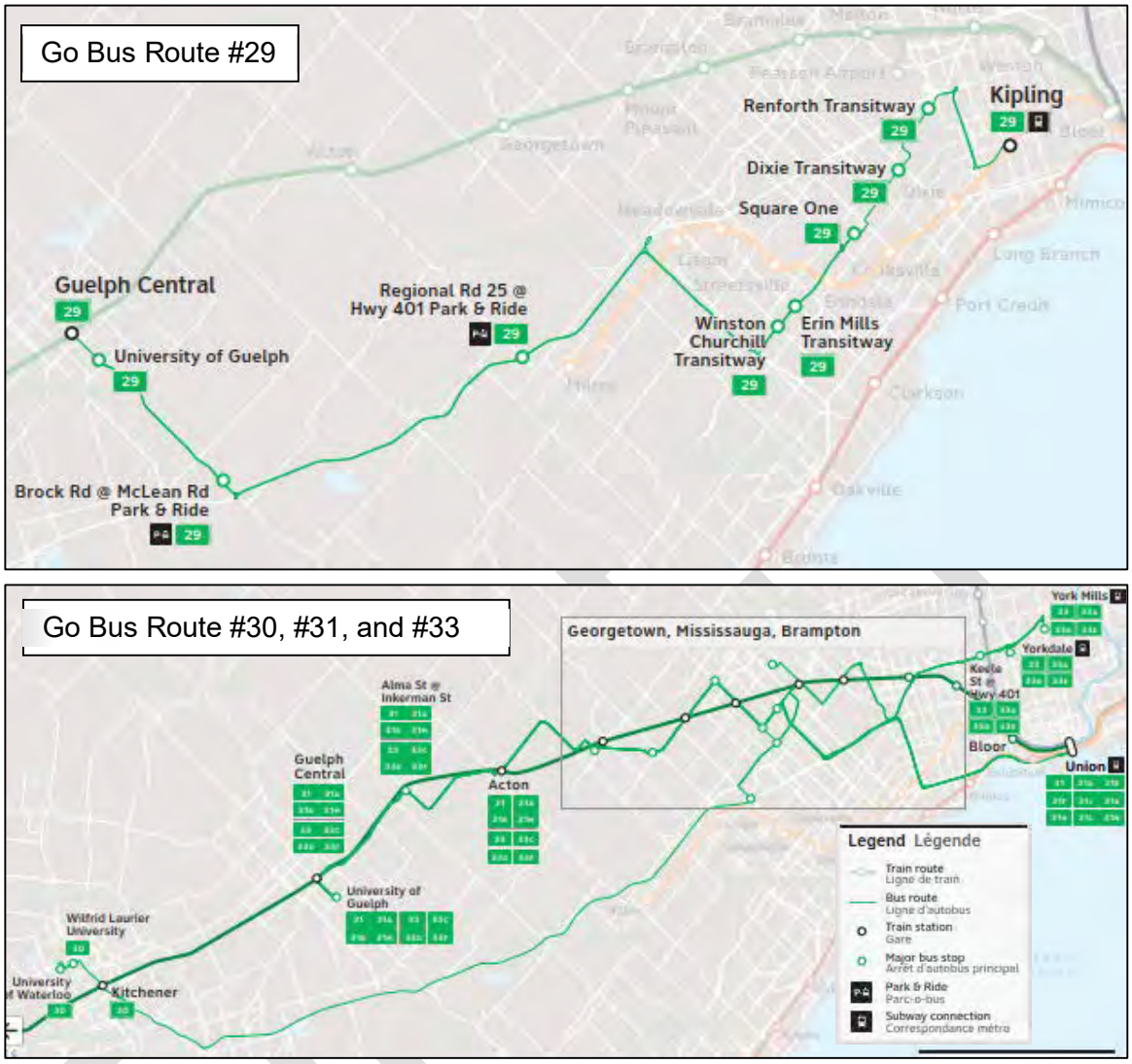


Figure 7: GO Transit Study Area Bus Routes

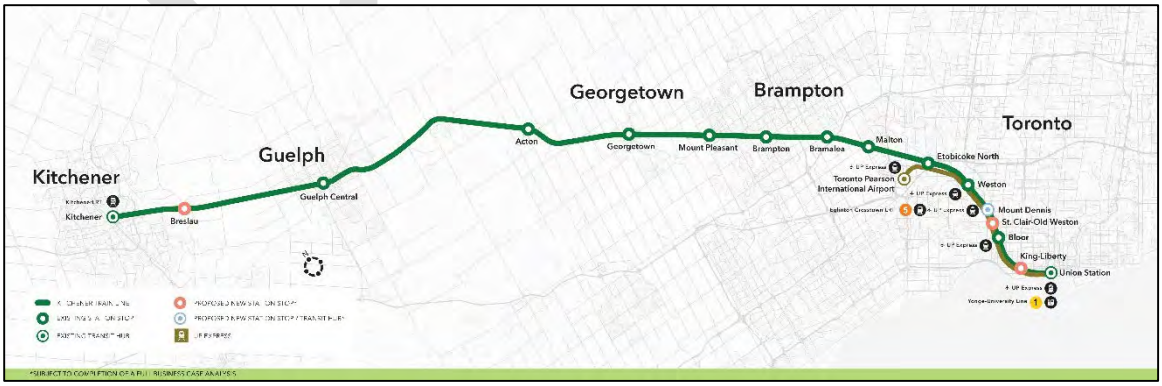


Figure 8: GO Train Kitchener Line Route

2.5 Study Area Intersections

The intersections analyzed as part of this study are all municipal intersections from Woolwich Street in the north to Carden Street in the south, inclusively, and are presented in **Figure 9**. The following subsections provide further descriptions of the intersections including their traffic control and lane configurations.

Figure 9: Study Area Intersections

2.5.1 Woolwich Street at Wyndham Street North

The intersection of Woolwich Street and Wyndham Street is signalized. The north, south, and west approaches consist of a left-turning lane and one through lane and one shared through/right-turning lane. The east approach consists of one right-turning lane and one through lane. There are no left turns permitted through the east approach. The Woolwich Street and Wyndham Street intersection is shown in **Figure 10.**

Figure 10: Woolwich and Wyndham, Woolwich Street (east) Approach

2.5.2 Douglas Street at Wyndham Street N

Douglas Street is a northbound one-way street starting at Wyndham Street. Douglas Street intersects Wyndham Street just north of the Quebec Street and Wyndham Street intersection.

2.5.3 Quebec Street at Wyndham Street N

The three-legged intersection of Quebec Street and Wyndham Street is a signalized intersection. The west approach has one left-turning lane and one right-turning lane. The north approach has one through lane and one shared through/right-turning lane. The south approach consists of one through lane and one shared through/left-turning lane. The Quebec Street and Wyndham Street intersection is shown in **Figure 11.**

Figure 11: Quebec Street and Wyndham Street Intersection (facing west)

2.5.4 Cork Street E at Wyndham Street N

The intersection of Cork Street E and Wyndham Street is controlled by a single stop sign at the Cork Street E (west) approach. The north approach has one through lane and one shared through/right turning lane. The south approach consists of one through lane and one shared through/left-turning lane. The west approach is shared for all movements.

2.5.5 Wyndham Street N at Macdonell Street

The intersection of Macdonell Street and Wyndham Street is signalized. The north approach has one shared through/right-turning lane and one left-turning lane. The south approach consists of one shared through/right-turning lane, and one shared through/ left-turning lane. The east and west approaches consist of a shared through/left-turn lane and small right turn pocket lane at the intersection. The Wyndham Street and Macdonell Street intersection is shown in **Figure 12.**

Figure 12: Intersection of Wyndham Street and Macdonell Street (facing southeast)

2.5.6 Wyndham Street N at Carden Street

The intersection of Carden Street and Wyndham Street is signalized. Both the north and south approaches consist of one shared through/right-turning lane, and one left-turning lane. The east approach has a single shared through/left-turn lane and one right turning lane. The west approach consists of one lane shared for all movements.

3.0 EXISTING TRAFFIC CONDITIONS

3.1 Turning Movement Counts

Weekday and Saturday historical Turning Movement Counts (TMCs) from the years 2013 to 2021 were provided by the City of Guelph. At intersections where data was not available, RVA arranged for current data to be collected. All TMC data provided and collected can be found in **Appendix A**. The weekday peak period generally ranged between 8:00 am and 9:00 am for morning counts, 11:30 am to 1:30 pm for mid-day counts, and 4:00 pm to 5:30 pm for evening counts. The weekend peak period generally ranged between 11:00 am and 1:00 pm.

Given the range of years in which traffic data was collected, all historical data was grown by 1% per annum to a current base year. The growth rate utilized was determine through a review of historical 8-hour traffic count data along the corridor. The review indicated that growth along the corridor was nominal and as a result, a 1% growth rate would be a conservative estimate. Once grown to the base year condition, balancing adjustments were applied to the volumes to mitigate any problematic imbalances in volumes between adjacent intersections, which can occur when relying on a dataset consisting of varying years of traffic data. Turning Movement Diagrams (TMDs) for the existing intersection unbalanced and balanced turning movement volumes during the weekday a.m. and p.m. and Saturday midday peak hours are provided in **Appendix B**.

3.2 Existing Traffic Operations

3.2.1 Intersection Analysis Methodology

The industry standard Synchro macroscopic traffic analysis software was utilized to analyse the study area intersections. Key performance measures such as Level of Service (LOS), volume-to-capacity ratio (v/c ratio), and 95th percentile queuing was reported, and are defined below:

- **Average vehicle control delay** is used to characterize LOS for the entire intersection, an approach, or movement. Delay quantifies the variations in travel time and is also a surrogate measure of driver discomfort and fuel consumption.
- **V/c ratio** quantifies the degree to which the capacity of each signal phase is utilized by a defined lane group.
- **95th percentile queue** is the queue length which is expected to be exceeded only 5% of the time; it is common practice to identify preferred storage length requirements for auxiliary turn lanes at signalized intersections based on estimated peak hour 95th percentile queueing.

Table 1 identifies the control delay thresholds (seconds of delay per vehicle) for each LOS based on Highway Capacity Manual (HCM) methodology.

Table 1: Characteristics of Level of Service at Intersections

LEVEL OF SERVICE (LOS)	CONTROL DELAY (seconds / vehicle)	
	SIGNALIZED INTERSECTION	UNSIGNALIZED INTERSECTION
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Existing signal timing plans for the study area intersections were provided by the City for use in the traffic analysis; the signal timing plans are provided in **Appendix C**.

3.2.2 City of Guelph Traffic Impact Study Guidelines

The City of Guelph currently has their own Traffic Impact Study Guidelines dated April 2016. Section 3.7.1 of this document provides capacity analysis thresholds for movements at signalized and unsignalized intersections which should be documented. Those thresholds are as follows:

Signalized Intersections

- v/c ratios for overall intersection operation, through movements or shared/turning movements increased to 0.85 or above.
- v/c ratios for exclusive movements increased to 0.90 or above.
- Queues for an individual movement are projected to exceed available turning lane storage.

Unsignalized Intersections

- Level of Service (LOS) based on the average delay per vehicle, on individual movements exceeds LOS “E”
- The estimated 95th percentile queue length or an individual movement exceeds the available queue storage.

3.2.3 Existing Intersection Capacity Analysis

The following section presents the intersection capacity analysis results for the study area intersections during the weekday a.m., p.m., and Saturday midday peak hours under existing conditions. The analysis was conducted using Synchro software and utilized the signal timing plans provided by the City. The analysis results are presented in **Table 2**.

The HCM output reports from Synchro for the intersection analysis are provided in **Appendix D**.

Table 2: Existing Intersection Analysis Results

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St./Eramosa Rd. & Woolwich St. *(Signalized)*	**Overall**	**0.72**	**C**	**-**	**0.84**	**C**	-	**0.59**	**B**	**-**	-
	EBL	0.54	B	26m	0.80	C	60m	0.54	B	35m	55m
	EBT	0.39	B	38m	0.37	B	50m	0.24	B	26m	-
	EBR	0.04	B	<1 veh	0.05	B	<1 veh	0.05	B	<1 veh	-
	WBT	0.90	D	86m	0.65	C	87m	0.61	C	44m	-
	WBR	0.80	D	67m	0.90	E	80m	0.67	C	40m	83m
	NBL	0.35	C	8m	0.71	D	24m	0.46	C	14m	25m
	NBTTR	0.28	C	12m	0.44	C	25m	0.32	C	20m	-
	SBL	0.29	B	25m	0.48	D	42m	0.41	C	30m	20m
	SBTTR	0.27	B	19m	0.32	C	27m	0.36	B	25m	-
Wyndham St. & Douglas St. *(Unsignalized)*	**Overall**	**-**	**-**	**-**	-	-	-	**-**	**-**	**-**	-
	SBLT	0.01	A	<1 veh	0.01	A	<1 veh	0.02	A	<1 veh	-
	SBT	0.11	A	<1 veh	0.11	A	<1 veh	0.12	A	<1 veh	-
	NBT	0.07	A	<1 veh	0.13	A	<1 veh	0.13	A	<1 veh	-
	NBTR	0.06	A	<1 veh	0.10	A	<1 veh	0.08	A	<1 veh	-
Wyndham St. & Quebec St. *(Signalized)*	**Overall**	**0.22**	**B**	**-**	**0.34**	**B**	-	**0.31**	**B**	**-**	-
	EBL	0.17	B	14m	0.28	B	22m	0.33	B	26m	-
	EBR	0.05	B	1 veh	0.14	B	11m	0.10	B	11m	15m
	SBTTR	0.24	B	21m	0.25	B	21m	0.24	B	18m	-
	NBLTT	0.27	B	18m	0.39	B	27m	0.32	B	22m	-
Wyndham St. & Cork St. *(Unsignalized)*	**Overall**	**-**	**-**	**-**	-	-	-	**-**	**-**	**-**	-
	EBLR	0.10	B	<1 veh	0.18	B	<1 veh	0.17	B	<1 veh	-
	NBLT	0.04	A	<1 veh	0.05	A	<1 veh	0.04	A	<1 veh	-
	NBT	0.10	A	<1 veh	0.14	A	<1 veh	0.11	A	<1 veh	-
	SBT	0.11	A	<1 veh	0.13	A	<1 veh	0.11	A	<1 veh	-
	SBTR	0.07	A	<1 veh	0.09	A	<1 veh	0.08	A	<1 veh	-
Wyndham St. & Macdonell St. *(Signalized)*	**Overall**	**0.55**	**B**	**-**	**0.61**	**B**	**-**	**0.47**	**B**	**-**	-
	EBLT	0.48	C	34m	0.48	B	33m	0.64	C	40m	-
	EBR	0.03	B	<1 veh	0.05	B	<1 veh	0.07	B	8m	-
	WBLT	0.79	C	63m	0.63	B	47m	0.58	C	39m	-
	WBR	0.09	B	10m	0.16	B	12m	0.16	B	13m	-
	NBLTTR	0.29	B	21m	0.53	B	28m	0.23	B	18m	-
	SBL	0.40	C	18m	0.73	D	46m	0.58	C	31m	65m
	SBTR	0.37	B	38m	0.45	A	40m	0.32	A	30m	-

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St. & Carden St. *(Signalized)*	**Overall**	**0.27**	**A**	**-**	**0.30**	**A**	**-**	**0.29**	**A**	**-**	-
	NBL	0.07	A	7m	0.05	A	6m	0.03	A	<1 veh	20m
	NBTR	0.20	A	26m	0.29	A	39m	0.18	A	25m	-
	SBL	0.07	A	<1 veh	0.07	A	<1 veh	0.04	A	<1 veh	30m
	SBTR	0.24	A	22m	0.24	A	22m	0.24	A	22m	-
	EBLTR	0.39	C	13m	0.34	C	13m	0.52	C	16m	-
	WBLT	0.08	C	<1 veh	0.28	C	8m	0.18	C	<1 veh	-
	WBR	0.02	C	<1 veh	0.03	C	<1 veh	0.02	C	<1 veh	30m

All of the study area intersections are currently operating satisfactorily with no significant operational concerns during any of the three peak hours analyzed. At the intersection of Wyndham Street and Woolwich Street there are two movements (westbound through during the a.m. peak hour and westbound right-turn during the p.m. peak hour) which are currently nearing capacity (v/c ratios of 0.90), although this is not having a significant operational impact on other movements or the intersection overall. Given the notable reserve capacity at other movements at the intersection, signal timing optimizations (re-balancing of green time) can mitigate the concern as presented in **Table 3**.

Table 3: Existing Intersection Analysis Results – Optimized Timings

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St./Eramosa Rd. & Woolwich St. *(Signalized)*	**Overall**	**0.70**	**C**	**-**	**0.85**	**C**	-	**0.60**	**B**	**-**	-
	EBL	0.56	B	26m	0.84	C	65m	0.56	B	36m	55m
	EBT	0.39	B	38m	0.38	B	52m	0.25	B	27m	-
	EBR	0.04	B	<1 veh	0.05	B	<1 veh	0.05	C	<1 veh	-
	WBT	0.82	D	79m	0.67	C	89m	0.60	C	44m	-
	WBR	0.80	D	67m	0.82	E	77m	0.66	C	40m	83m
	NBL	0.35	C	8m	0.73	D	23m	0.46	C	14m	25m
	NBTTR	0.28	C	12m	0.45	C	26m	0.32	C	20m	-
	SBL	0.29	B	25m	0.44	C	41m	0.41	C	30m	20m
	SBTTR	0.27	B	19m	0.31	C	27m	0.36	B	24m	-

4.0 COLLISION DATA REVIEW

Historical collision data for all study area intersections and midblock sections from 2016 to 2020, inclusively, was provided by the City and reviewed. The data includes key characteristics of the reported collisions based on information recorded in Motor Vehicle Accident Reports (MVARs), providing an opportunity to analyze the data for historical trends or patterns that could be contributing to the collision history of each intersection/midblock location.

Overall, a total of 131 collisions have been reported over the five-year period within the study area corridor. Of the 131 total collisions recorded, 82 occurred at intersections and the remaining 49 occurred midblock. The following sections provide a summary of the collision findings which occurred at intersections and midblock locations withing the study area. The raw collision data information as provided by the City is in **Appendix E**.

4.1 Collision Findings at Intersections

As mentioned previously, there were 82 total collisions which occurred at intersections within the study area. A review of the collisions based on classification indicates that 48% (39) resulted in property damage only. Another 23% (19) were identified as non-reportable and 11% (9) were classified as non-fatal injury. Of note is that 23% (19) of the collisions were given no classification in the data provided and no fatal injury collisions were recorded. The breakdown of collisions by classification are presented in **Figure 13**.

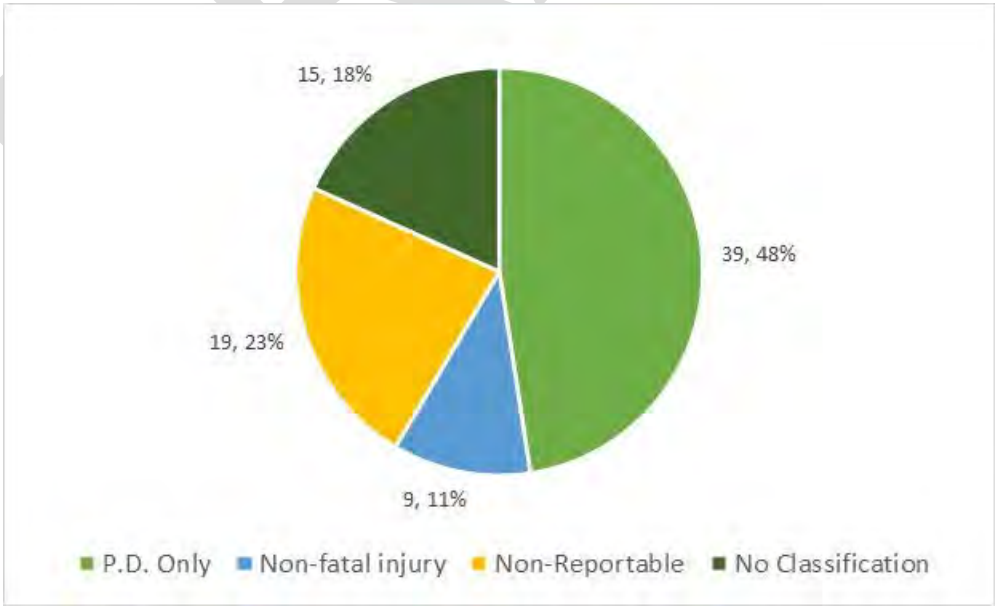


Figure 13: Breakdown of Collisions at Intersections based on Classification

Table 4 presents the breakdown of collisions by initial impact type which were recorded at each intersection.

Table 4: Breakdown of Collisions at Intersections based on Initial Impact Type

INTERSECTION	REAR ENDS	ANGLE	TURNING MOVEMENT	SIDESWIPE	SMV	APPROACHING	OTHER	TOTAL	TOTAL %
Wyndham St. at Carden St.	3	1	2	0	4	0	1	11	**13%**
Wyndham St. at Macdonell St.	4	2	3	2	3	0	3	17	**21%**
Wyndham St. at Cork St.	1	0	2	2	2	0	1	8	**10%**
Wyndham St. at Quebec St.	4	0	6	2	0	0	1	13	**16%**
Wyndham St. at Douglas St.	1	0	0	0	0	0	0	1	**1%**
Wyndham St. /Eramosa Rd. at Woolwich St.	5	3	10	6	5	1	2	32	**39%**
Totals	18	6	23	12	14	1	8	82	**100%**
Total %	**22%**	**7%**	**28%**	**15%**	**17%**	**1%**	**10%**	**100%**	

Based on the collision impact type results presented in **Table 4**, turning movement collisions were the predominant collision impact type for the overall study area with a total of 23 (28%) recorded over the five years of historical data. Rear end collisions were the next most common with 18 (22%) recorded.

The intersection of Wyndham Street with Woolwich Street contained the most collisions with 32 (39%) of the total collisions recorded. The largest proportion of collisions at this intersection were turning movements with 10 recorded.

Turning movement collisions occurred at almost all intersections throughout the study area and were typically the predominant collision type at each intersection, with the intersections of Wyndham Street at Woolwich Street and at Quebec Street having reported the most turning movement collisions. At Quebec Street, Macdonell Street and Cork Street, turning movement collisions could potentially be attributed to a lack of dedicated left turn lanes, which can result in visibility and/or driver confusion associated with vehicles turning left out of a general-purpose lane, especially when there are two opposing general-purpose lanes to gap seek. The lack of left-turn lanes can also be a potential contributing factor to rear-end collisions, with drivers not expecting that an upstream vehicle is planning on stopping within the general-purpose lane in order to complete a left-turn movement.

At the intersection of Wyndham Street with Woolwich Street, turning movement collisions occurred from all directions involving both left and right turning traffic. For vehicles travelling in the northbound/southbound directions, these collisions mainly involved left turning vehicles and could potentially be attributed to the curved horizontal alignment of the northbound approach to the intersection (south leg) combined with the uphill approach in the southbound direction.

4.2 Collision Findings at Midblock Sections

A total of 49 collisions occurred within the study area midblock sections. A review of the collisions based on classification indicates that 45% (22) of the collisions resulted in property damage only. Another 16% (8) were classified as non-reportable and 6% (3) resulted in non-fatal injury. Of note is that 33% (16) of the collisions were given no classification in the data provided and no fatal injury collisions were recorded. The breakdown of collisions by classification are presented in **Figure 14**.

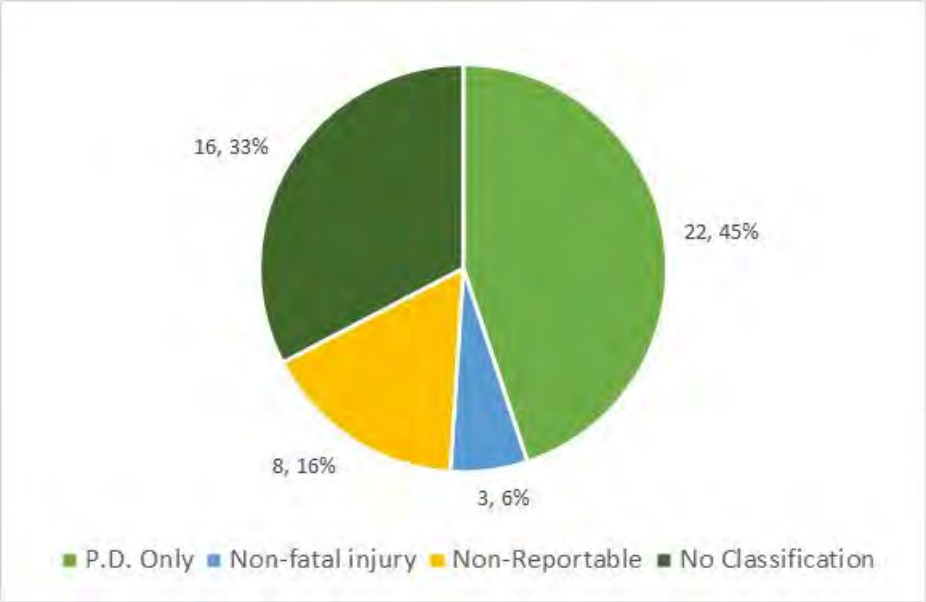


Figure 14: Breakdown of Midblock Collisions based on Classification

Table 5 presents the breakdown of collisions by initial impact type which were recorded within each midblock section.

Table 5: Breakdown of Midblock Collisions based on Initial Impact Type

MIDBLOCK	REAR ENDS	ANGLE	TURNING MOVEMENT	SIDESWIPE	SMV	APPROACHING	OTHER	TOTAL	TOTAL %
Between Douglas St. and Woolwich St.	0	0	3	5	9	0	0	17	**35%**
Between Douglas St. and Quebec St.	0	0	0	1	1	0	0	2	**4%**
Between Cork Street and Quebec St.	1	0	1	5	1	0	3	11	**22%**
Between Cork St. and Macdonell St.	2	0	2	5	7	0	0	16	**33%**
Between Carden St. and Macdonell St.	1	0	0	0	2	0	0	3	**6%**
Totals	**4**	**0**	**6**	**16**	**20**	**0**	**3**	**49**	**100%**
Total %	**8%**	**0%**	**12%**	**33%**	**41%**	**0%**	**6%**	**100%**	

The breakdown of collisions by initial impact type presented in **Table 4** show that single motor vehicle collisions are the predominant collision type within the study area midblock. A total of 20 (41%) were recorded over the five years of historical data. Sideswipe collisions were the next most common with 16 (33%) recorded.

The midblock sections between Douglas Street and Woolwich Street and Cork Street and Macdonell Street contained the greatest number of collisions with 35% (17) and 33% (16) recorded.

Single motor vehicle collisions occurred most frequently within the midblock sections between Woolwich Street and Quebec Street and between Cork Street and Macdonell Street. Further investigation into these midblock sections found that 70% (14) of these collisions involved parked vehicles. It is possible that these collisions involve autos striking parked vehicles or objects (sign poles, garbage cans, planters etc.) on the side of the road while parking their vehicles within the on-street parking available throughout the corridor (see **Figure 15**).

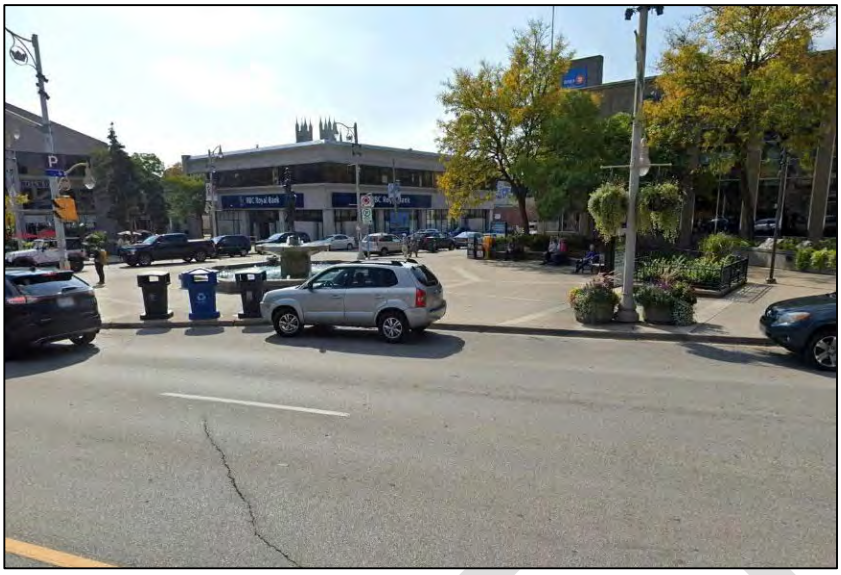


Figure 15: Objects near side of roadway adjacent on-street parking

5.0 FUTURE (2051) DO-NOTHING TRAFFIC CONDITIONS

5.1 Future Background Traffic Growth

Future background traffic growth for the corridor was established through the application of the 1% per annum growth rate to the existing traffic volumes as established under Section 3.1. The resulting background traffic volumes TMD for the 2051 horizon year during the weekday a.m., p.m. and Saturday Midday peak hours are presented in **Appendix F**.

5.2 Proposed Development Site Traffic Volumes

There are two developments within the downtown area in which estimated site trips have been included in the development of the future (2051) traffic volumes for the corridor. These developments are as follows:

- Baker District Redevelopment – Proposed mixed-use development to be located on the existing Baker Street and Wyndham Street parking lots located on the northeast corner of Baker Street and Chapel Lane
- 5 Arthur Street Development – Proposed mixed-use development located on the northwest corner of Arthur Street and Cross Street

The estimated site traffic generated by the proposed developments have been extracted from their respective Traffic Impact Studies and are presented in a TMD figure found in **Appendix G**.

5.3 Future (2051) Traffic Volumes

The future (2051) traffic volumes for the study corridor were established by combining the background traffic growth volumes with the estimated site traffic volumes from the Baker Street and 5 Arthur Street developments. The resulting future (2051) traffic volumes TMD for the weekday a.m., p.m. and Saturday Midday peak hours are presented in **Appendix H**.

5.4 Future (2051) Intersection Operations

5.4.1 Future (2051) Do-Nothing Intersection Analysis

The following section presents the intersection capacity analysis results for the study area intersections during the weekday a.m., p.m., and Saturday Midday peak hours under future (2051) Do-Nothing traffic conditions. The results of the analysis are presented in **Table 6**.

The HCM output reports from Synchro for the intersection analysis are provided in **Appendix I**.

Table 6: Future (2051) Do-Nothing Intersection Analysis Results

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St./Eramosa Rd. & Woolwich St. *(Signalized)*	**Overall**	**1.04**	**E**	**-**	**1.52**	**F**	**-**	**0.86**	**C**	**-**	-
	EBL	0.81	C	47m	1.70	F	147m	0.88	D	69m	55m
	EBT	0.57	B	58m	0.58	B	86m	0.33	B	36m	-
	EBR	0.05	B	<1 veh	0.07	B	1 veh	0.07	B	<1 veh	-
	WBT	1.38	F	136m	0.96	E	165m	0.82	D	74m	-
	WBR	1.14	F	105m	1.27	F	119m	0.81	D	67m	83m
	NBL	0.46	C	11m	0.97	F	44m	0.71	C	18m	25m
	NBTTR	0.38	C	16m	0.58	C	34m	0.44	C	26m	-
	SBL	0.40	C	34m	0.71	D	68m	0.51	C	41m	20m
	SBTTR	0.38	B	25m	0.45	C	36m	0.46	B	33m	-
Wyndham St. & Douglas St. *(Unsignalized)*	**Overall**	-	-	-	-	-	-	-	-	-	-
	NBT	0.10	A	<1 veh	0.18	A	<1 veh	0.17	A	<1 veh	-
	NBTR	0.09	A	<1 veh	0.14	A	<1 veh	0.10	A	<1 veh	-
	SBLT	0.02	A	<1 veh	0.02	A	<1 veh	0.03	A	<1 veh	-
	SBT	0.15	A	<1 veh	0.15	A	<1 veh	0.16	A	<1 veh	-
Wyndham St. & Quebec St. *(Signalized)*	**Overall**	**0.33**	**B**	**-**	**0.50**	**B**	-	**0.45**	**B**	-	-
	EBL	0.18	B	18m	0.30	B	28m	0.36	B	33m	-
	EBR	0.08	B	8m	0.19	B	13m	0.14	B	12m	15m
	NBTTR	0.41	B	26m	0.59	B	42m	0.47	B	31m	-
	SBTTR	0.34	B	28m	0.36	B	30m	0.32	B	23m	-

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St. & Cork St. *(Unsignalized)*	**Overall**	-	-	-	-	-	-	-	-	-	-
	EBLR	0.15	B	<1 veh	0.30	C	1 veh	0.27	C	1 veh	-
	NBLT	0.05	A	<1 veh	0.07	A	<1 veh	0.05	A	<1 veh	-
	NBT	0.13	A	<1 veh	0.20	A	<1 veh	0.15	A	<1 veh	-
	SBT	0.14	A	<1 veh	0.19	A	<1 veh	0.14	A	<1 veh	-
	SBTR	0.09	A	<1 veh	0.12	A	<1 veh	0.11	A	<1 veh	-
Wyndham St. & Macdonell St. *(Signalized)*	**Overall**	**1.01**	**F**	**-**	**0.95**	**E**	**-**	**0.68**	**C**	**-**	-
	EBLT	1.22	F	133m	1.07	F	136m	0.85	D	67m	-
	EBR	0.05	B	<1 veh	0.07	B	<1 veh	0.14	B	12m	-
	WBLT	1.52	F	140m	1.15	F	116m	0.69	C	53m	-
	WBR	0.20	B	16m	0.28	B	22m	0.27	B	20m	-
	NBLTTR	0.45	B	30m	0.78	C	46m	0.34	B	26m	-
	SBL	0.61	D	27m	0.80	D	58m	0.82	E	44m	65m
	SBTR	0.56	B	57m	0.62	B	60m	0.47	B	50m	-
Wyndham St. & Carden St. *(Signalized)*	**Overall**	**0.39**	**A**	**-**	**0.43**	**A**	**-**	**0.40**	**A**	**-**	-
	EBLTR	0.40	C	17m	0.34	C	16m	0.50	C	20m	20m
	WBLT	0.07	C	<1 veh	0.23	C	9m	0.16	C	1 veh	-
	WBR	0.03	C	<1 veh	0.03	C	<1 veh	0.03	C	<1 veh	30m
	NBL	0.11	A	10m	0.09	A	8m	0.05	A	<1 veh	-
	NBTR	0.31	A	39m	0.45	A	61m	0.27	A	35m	-
	SBL	0.10	A	<1 veh	0.11	A	<1 veh	0.06	A	<1 veh	-
	SBTR	0.35	A	17m	0.36	A	36m	0.35	A	35m	30m

The intersections of Wyndham Street with Douglas Street, Quebec Street, Cork Street and Carden Street are all forecast to operate well under future (2051) traffic conditions.

For the intersections of Wyndham Street at Woolwich Street and at Macdonell Street, there are several movements forecast to be over capacity during the a.m. and p.m. peak hours, resulting in long delays and some queueing concerns. A review of potential signal timing optimizations was completed, the results of which are presented in **Table 7** with HCM output reports from Synchro found in **Appendix I**.

Table 7: Future (2051) Do-Nothing Intersection Analysis Results – Optimized Timings

INTERSECTION *(TRAFFIC CONTROL)*	MVMT	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR			SATURDAY MIDDAY PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	V/C	LOS	95TH % QUEUE (M)	
Wyndham St./Eramosa Rd. & Woolwich St. *(Signalized)*	**Overall**	**0.73**	**C**	**-**	**0.98**	**D**	**-**				
	EBL	0.64	B	43m	0.98	E	158m	0.66	C	57m	55m
	EBT	0.41	B	67m	0.47	B	93m	0.27	B	40m	-
	EBR	0.06	B	<1 veh	0.07	B	1 veh	0.07	B	1 veh	-
	WBT	0.82	D	166m	0.98	E	225m	0.71	D	82m	-
	WBR	0.58	B	87m	0.52	C	75m	0.93	E	116m	83m
	NBL	0.34	C	23m	0.88	E	58m	0.48	C	36m	25m
	NBTTR	0.32	D	26m	0.67	D	48m	0.43	C	40m	-
	SBL	0.65	D	69m	0.93	F	106m	0.58	C	74m	20m
	SBTTR	0.60	C	63m	0.79	D	73m	0.72	C	86m	-
Wyndham St. & Macdonell St. *(Signalized)*	**Overall**	**0.87**	**C**	**-**	**0.89**	**D**	**-**				
	EBLT	0.85	C	109m	0.93	D	124m	0.84	D	64m	-
	EBR	0.05	B	<1 veh	0.07	B	<1 veh	0.14	B	12m	-
	WBLT	0.99	E	117m	0.91	D	102m	0.68	C	52m	-
	WBR	0.18	B	14m	0.26	B	20m	0.27	B	19m	-
	NBLTTR	0.57	C	34m	0.80	C	48m	0.40	B	30m	-
	SBL	0.61	D	27m	0.97	F	64m	0.55	C	31m	65m
	SBTR	0.65	C	67m	0.67	B	66m	0.48	B	52m	-

Through signal timing adjustments and optimization, there are still several movements at the two intersections forecast to be nearing capacity during peak hours in 2051, assuming the current intersection lane configurations and geometry. The capacity constraints are primarily concentrated to the p.m. peak hour, with the only reported capacity constraint in the a.m. peak hour being the westbound left/through movement at the intersection of Wyndham Street and MacDonnell Street, and no capacity constraints expected during the Saturday peak hour.

6.0 SUMMARY OF FINDINGS

The following section presents the conclusions derived from the completion of the Existing Traffic and Transportation Conditions Analysis for Wyndham Street which included a review of existing active transportation and transit facilities, review of collisions within the study area, and existing and future (2051) do-nothing intersection operations along the corridor.

- Pedestrian facilities within the corridor consist of sidewalks on both sides of the road along the entire corridor with signalized pedestrian crossings located at 112 and 146 Wyndham Street North.
- The corridor is currently designated as an "on-road" cycling facility with connections and regulatory signage located along the corridor restricting cyclist from using the sidewalks. To the south of Carden Street, Wyndham Street North has paved shoulders dedicated for cyclists.
- There are several Guelph Transit bus routes which run through the study area along Wyndham Street, Quebec Street and Macdonell Street. There are currently three bus stops for Guelph Transit routes located at the intersection of Quebec Street and Wyndham Street North.
- Guelph Central Station is located at the southern edge of the study area along Carden Street and in addition to providing stops for Guelph Transit nus routes, also services GO transit (bus and rail), Via Rail and Flixbus services.
- A review of historical collision data found a total of 131 collisions reported over the five-year period within the study area corridor, including 82 occurring at intersections and the remaining 49 occurring at midblock locations.
- 48% (39) of collisions at intersections within the study area were classified as property damage only and 11% (9) classified as non-fatal injury. There were no fatal injuries recorded at intersections. Turning movement collisions were the most predominant collision impact type with 28% (23) followed by rear ends with 22% (18). The contributing factors for these collisions could potentially be attributed to a lack of dedicated left turn lanes at several intersections, and the horizontal/vertical alignment to the north/south approaches of Wyndham Street with Woolwich Street.
- 49% (24) of collisions within the study area midblock sections were classified as property damage only with 6% (3) classified as non-fatal injury. There were no fatal injuries recorded within the study area midblock locations. Single motor vehicle collisions were the most predominant collision impact type with 41% (20) followed

by sideswipes with 33% (16). A notable contributing factor to these collisions is the on-street parking available within the study area corridor.

- Under existing traffic conditions, all of the study area intersections operate satisfactorily with no critical movements during any of the three peak hours analyzed.
- Intersection capacity analysis results for the study area intersections under the future (2051) horizon year scenario indicate that the existing capacity of the study intersections are sufficient to accommodate the projected 2051 traffic volumes, with the exception of the intersections of Wyndham Street North at Woolwich Street and Wyndham Street North at Macdonell Street which will likely require improvements beyond just signal timing adjustments in order to maintain an acceptable level of service in 2051.

APPENDIX A

TRAFFIC COUNT DATA

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 15:00:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Municipality: Guelph
Site #: 1916000001
Intersection: Eramosa Rd & Woolwich St
TFR File #: 1
Count date: 28-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Eramosa Rd runs N/S

North Leg Total: 1114
North Entering: 608
North Peds: 18
Peds Cross: ⋈

Heavys	0	0	0	0
Trucks	2	1	0	3
Cars	237	242	126	605
Totals	239	243	126	

Heavys	0
Trucks	1
Cars	505
Totals	506

East Leg Total: 629
East Entering: 343
East Peds: 29
Peds Cross: ⧖

Eramosa Rd

Heavys	Trucks	Cars	Totals
0	3	507	510

Cars	Trucks	Heavys	Totals
161	1	0	162
179	1	0	180
1	0	0	1
341	2	0	

Woolwich St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	200	200
0	0	137	137
0	0	65	65
0	0	402	

Woolwich St

Cars	Trucks	Heavys	Totals
285	1	0	286

Wyndham St N

Peds Cross: ⧖
West Peds: 33
West Entering: 402
West Leg Total: 912

Cars	308
Trucks	1
Heavys	0
Totals	309

Cars	91	144	22	257
Trucks	0	0	1	1
Heavys	0	0	0	0
Totals	91	144	23	

Peds Cross: ⋈
South Peds: 27
South Entering: 258
South Leg Total: 567

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

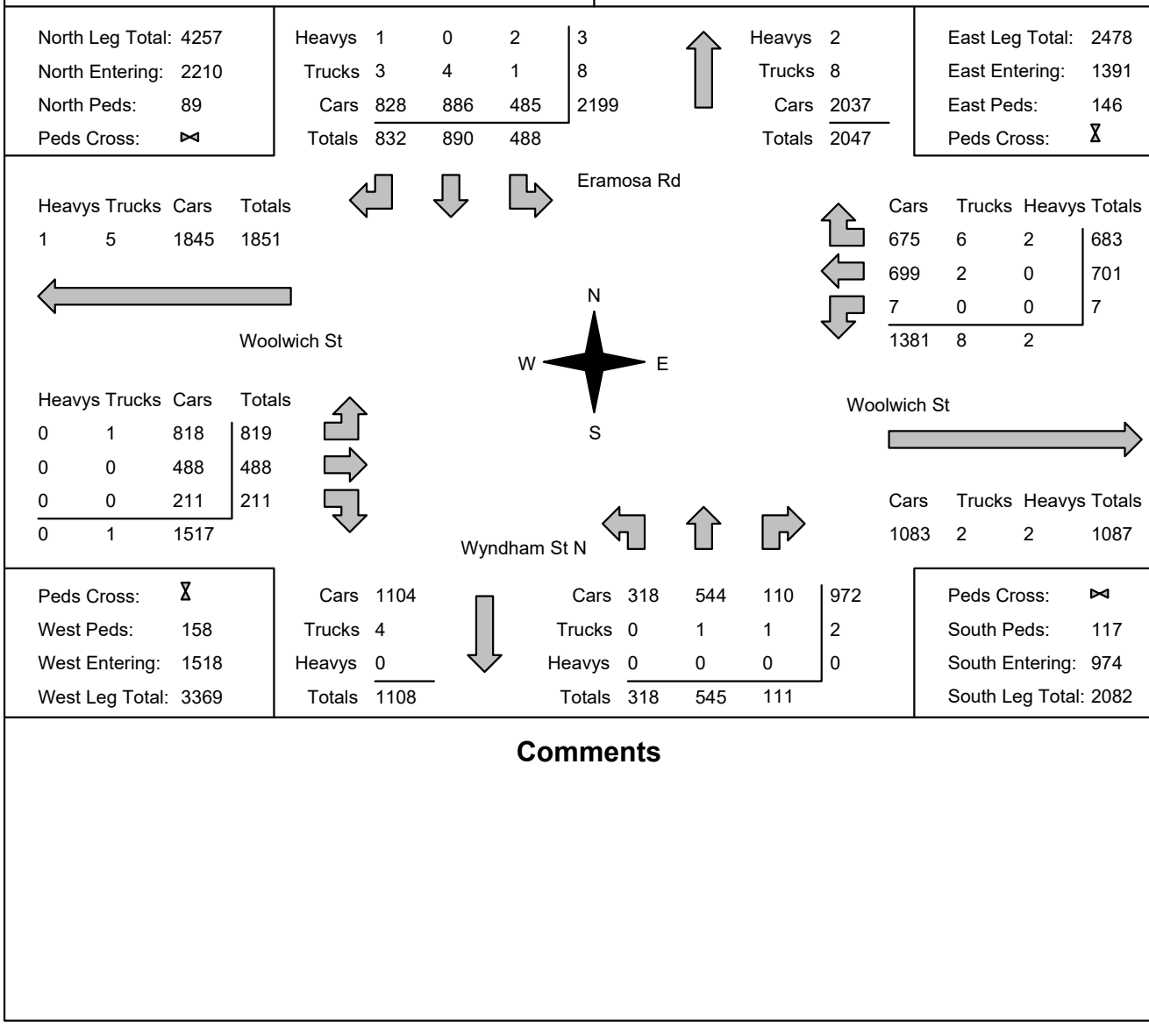
Municipality: Guelph
Site #: 1916000001
Intersection: Eramosa Rd & Woolwich St
TFR File #: 1
Count date: 28-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Eramosa Rd runs N/S



Comments

Wyndham St and Eramosa Rd @ Woolwich St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Woolwich St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Leo

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S

North Leg Total: 851
North Entering: 402
North Peds: 13
Peds Cross: ⋈

Cyclists	0	1	1	2
Trucks	1	7	2	10
Cars	165	125	100	390
Totals	166	133	103	

Cyclists	3
Trucks	38
Cars	408
Totals	449

East Leg Total: 822
East Entering: 505
East Peds: 60
Peds Cross: ⧖

Eramosa Rd

Cyclists	Trucks	Cars	Totals
4	25	464	493

Cars	Trucks	Cyclists	Totals
212	12	0	224
261	17	3	281
0	0	0	0
473	29	3	

Woolwich St

N
W E
S

Cyclists	Trucks	Cars	Totals
1	18	129	148
1	27	175	203
3	3	40	46
5	48	344	

Woolwich St

Cars	Trucks	Cyclists	Totals
286	29	2	317

Wyndham St

Peds Cross: ⧖
West Peds: 25
West Entering: 397
West Leg Total: 890

Cars	165
Trucks	10
Cyclists	4
Totals	179

Cars	38	67	11	116
Trucks	7	8	0	15
Cyclists	1	2	0	3
Totals	46	77	11	

Peds Cross: ⋈
South Peds: 25
South Entering: 134
South Leg Total: 313

Comments

Wyndham St and Eramosa Rd @ Woolwich St

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Woolwich St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Leo

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S

North Leg Total: 731
North Entering: 322
North Peds: 41
Peds Cross: ⋈

Cyclists	0	4	0	4
Trucks	6	7	5	18
Cars	113	101	86	300
Totals	119	112	91	

Cyclists	1
Trucks	27
Cars	381
Totals	409

East Leg Total: 686
East Entering: 387
East Peds: 66
Peds Cross: ⧖

Eramosa Rd

Cyclists	Trucks	Cars	Totals
5	31	399	435

Cars	Trucks	Cyclists	Totals
153	5	1	159
212	14	2	228
0	0	0	0
365	19	3	

Woolwich St

N
W E
S

Cyclists	Trucks	Cars	Totals
0	10	141	151
2	9	157	168
1	6	53	60
3	25	351	

Woolwich St

Cars	Trucks	Cyclists	Totals
272	24	3	299

Wyndham St

Peds Cross: ⧖
West Peds: 84
West Entering: 379
West Leg Total: 814

Cars	154
Trucks	13
Cyclists	5
Totals	172

Cars	74	87	29	190
Trucks	11	12	10	33
Cyclists	3	0	1	4
Totals	88	99	40	

Peds Cross: ⋈
South Peds: 37
South Entering: 227
South Leg Total: 399

Comments

Wyndham St and Eramosa Rd @ Woolwich St

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Woolwich St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Leo

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S

North Leg Total: 1064
North Entering: 451
North Peds: 23
Peds Cross: ⋈

Cyclists	0	5	0	5
Trucks	1	5	4	10
Cars	175	134	127	436
Totals	176	144	131	

Cyclists	7
Trucks	34
Cars	572
Totals	613

East Leg Total: 948
East Entering: 536
East Peds: 40
Peds Cross: ⧖

Eramosa Rd

Cyclists	Trucks	Cars	Totals
12	19	592	623

Cars	Trucks	Cyclists	Totals
185	9	0	194
325	7	9	341
1	0	0	1
511	16	9	

Woolwich St

N
W E
S

Cyclists	Trucks	Cars	Totals
0	12	251	263
5	22	227	254
2	3	51	56
7	37	529	

Woolwich St

Cars	Trucks	Cyclists	Totals
378	27	7	412

Wyndham St

Peds Cross: ⧖
West Peds: 75
West Entering: 573
West Leg Total: 1196

Cars	186
Trucks	8
Cyclists	7
Totals	201

Cars	92	136	24	252
Trucks	11	13	1	25
Cyclists	3	7	2	12
Totals	106	156	27	

Peds Cross: ⋈
South Peds: 42
South Entering: 289
South Leg Total: 490

Comments

Wyndham St and Eramosa Rd @ Woolwich St

Eight Hour Peak Diagram

Eight Hour Peak
From: 8:00:00
To: 16:00:00

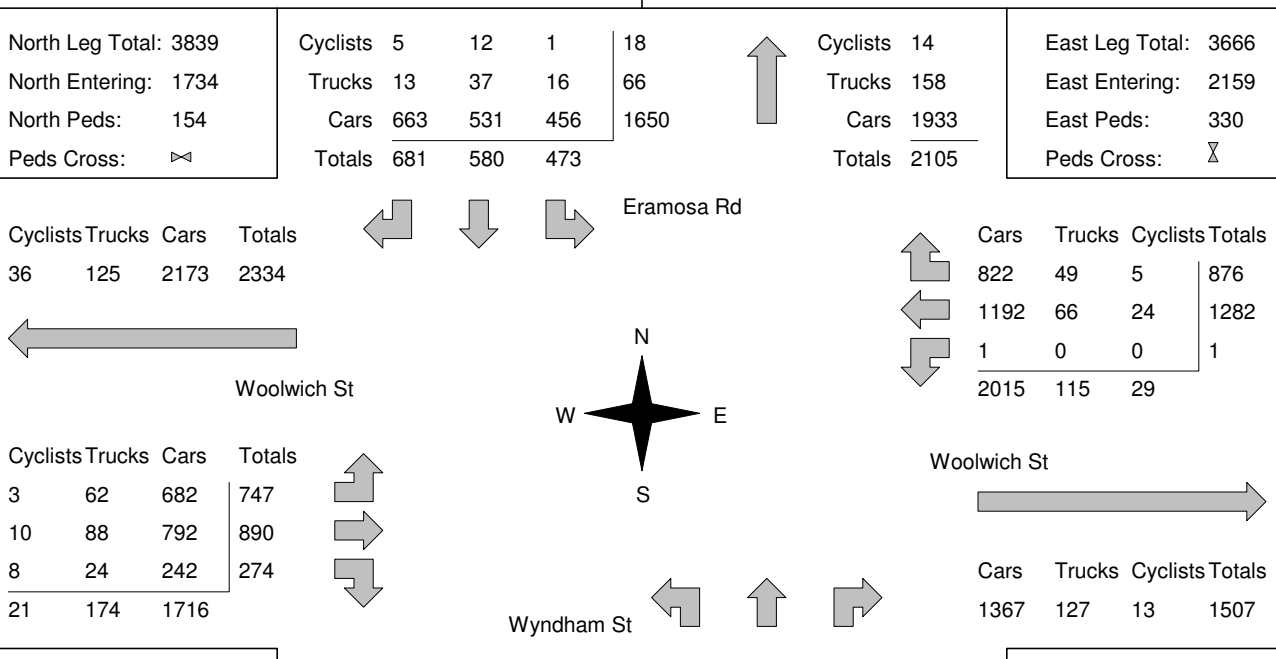
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Woolwich St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Leo

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St and Eramosa Rd @ Woolwich St

Total Count Diagram

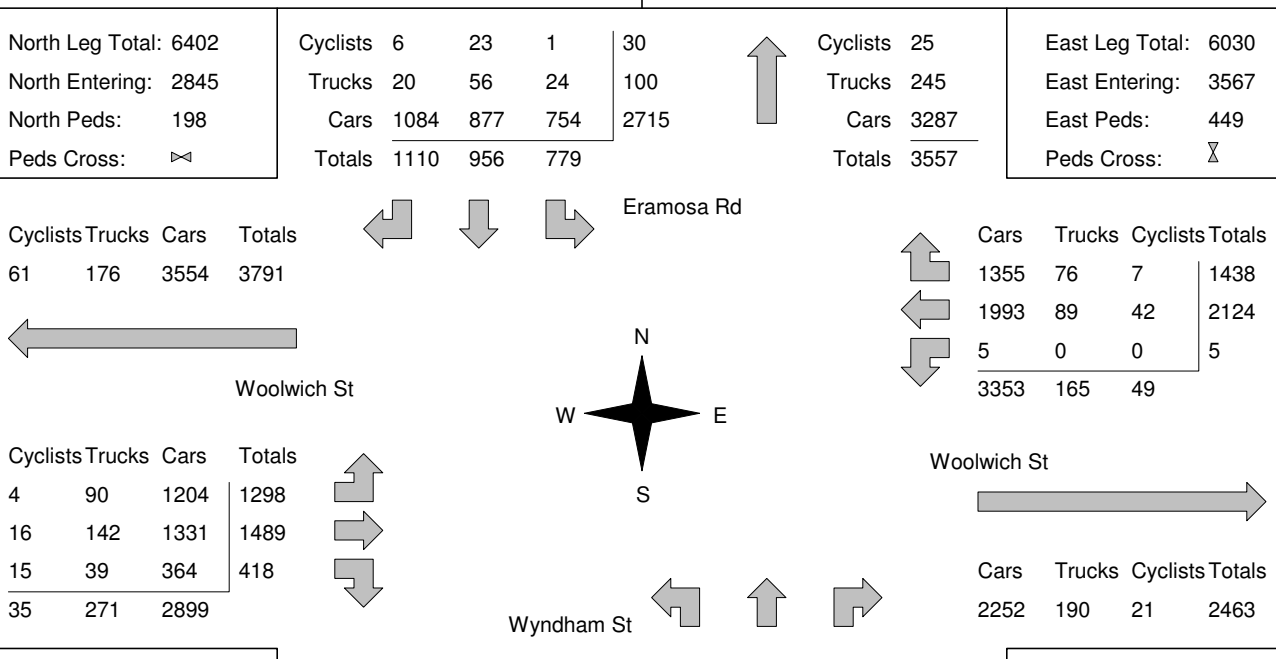
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Woolwich St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Leo

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Woolwich Street & Douglas Street

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Guelph
Site #: 0000004505
Intersection: Woolwich Street & Douglas Street
TFR File #: 2
Count date: 25-Sep-2013

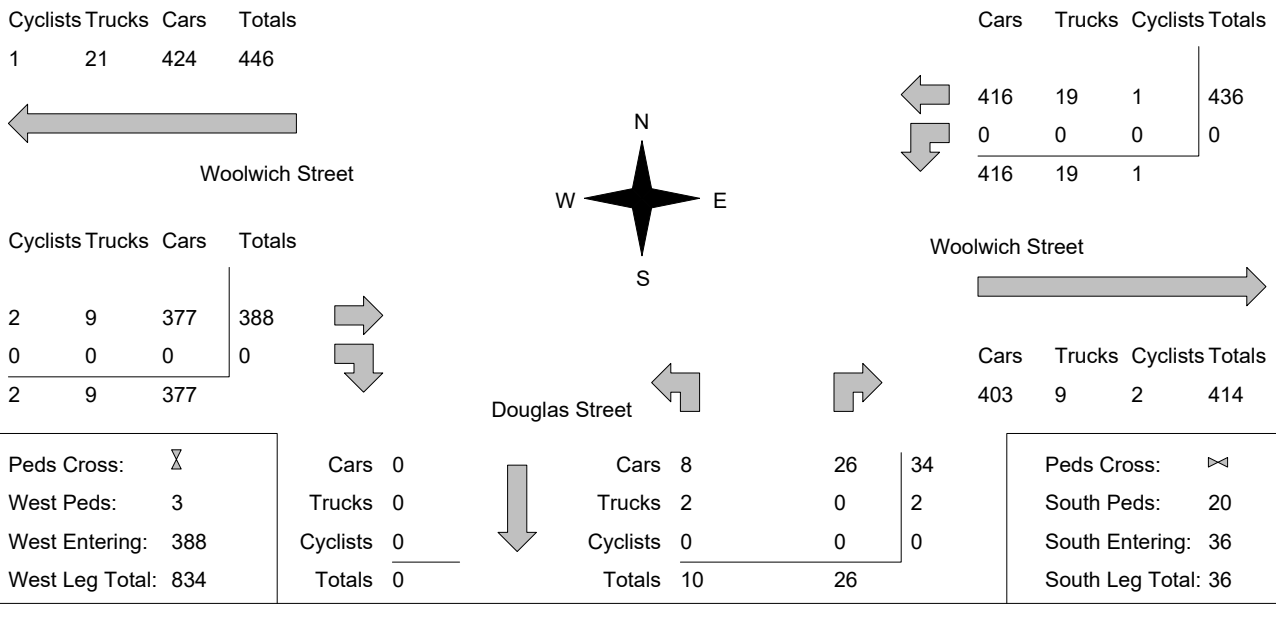
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Woolwich Street runs W/E

East Leg Total: 850
East Entering: 436
East Peds: 2
Peds Cross:



Peds Cross:
West Peds: 3
West Entering: 388
West Leg Total: 834

Peds Cross:
South Peds: 20
South Entering: 36
South Leg Total: 36

Comments

Woolwich Street & Douglas Street

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Guelph
Site #: 0000004505
Intersection: Woolwich Street & Douglas Street
TFR File #: 2
Count date: 25-Sep-2013

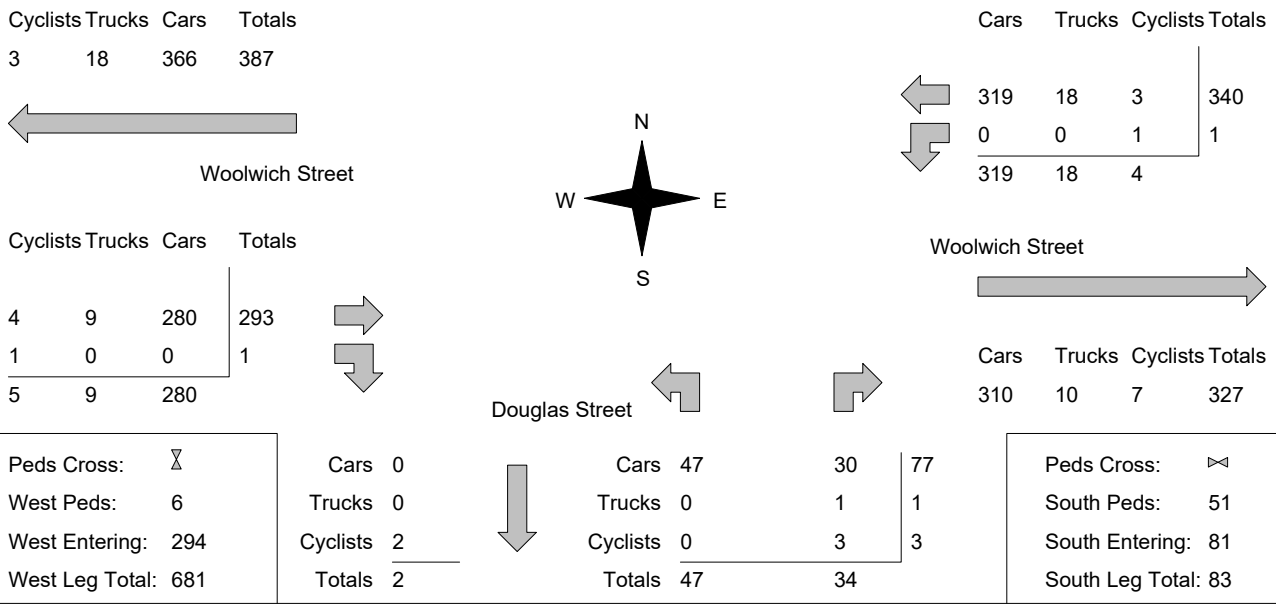
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Woolwich Street runs W/E

East Leg Total: 668
East Entering: 341
East Peds: 7
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 6
West Entering: 294
West Leg Total: 681

Cars 0
Trucks 0
Cyclists 2
Totals 2

Cars 47 30 77
Trucks 0 1 1
Cyclists 0 3 3
Totals 47 34

Peds Cross: ⋈
South Peds: 51
South Entering: 81
South Leg Total: 83

Comments

Woolwich Street & Douglas Street

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Guelph
Site #: 0000004505
Intersection: Woolwich Street & Douglas Street
TFR File #: 2
Count date: 25-Sep-2013

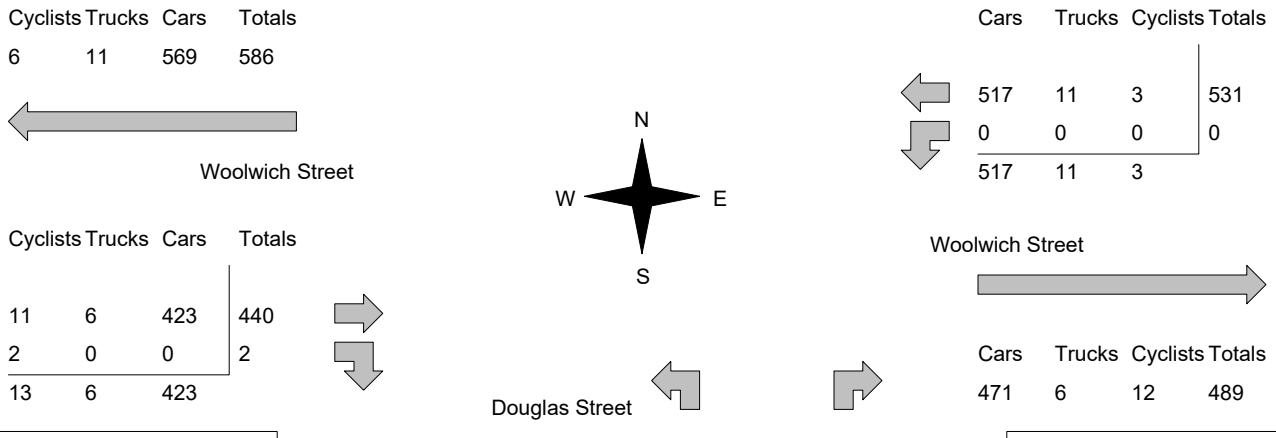
Weather conditions:
Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Woolwich Street runs W/E

East Leg Total: 1020
East Entering: 531
East Peds: 11
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 12
West Entering: 442
West Leg Total: 1028

Cars 0
Trucks 0
Cyclists 2
Totals 2

Cars 52 48 100
Trucks 0 0 0
Cyclists 3 1 4
Totals 55 49

Peds Cross: ⋈
South Peds: 74
South Entering: 104
South Leg Total: 106

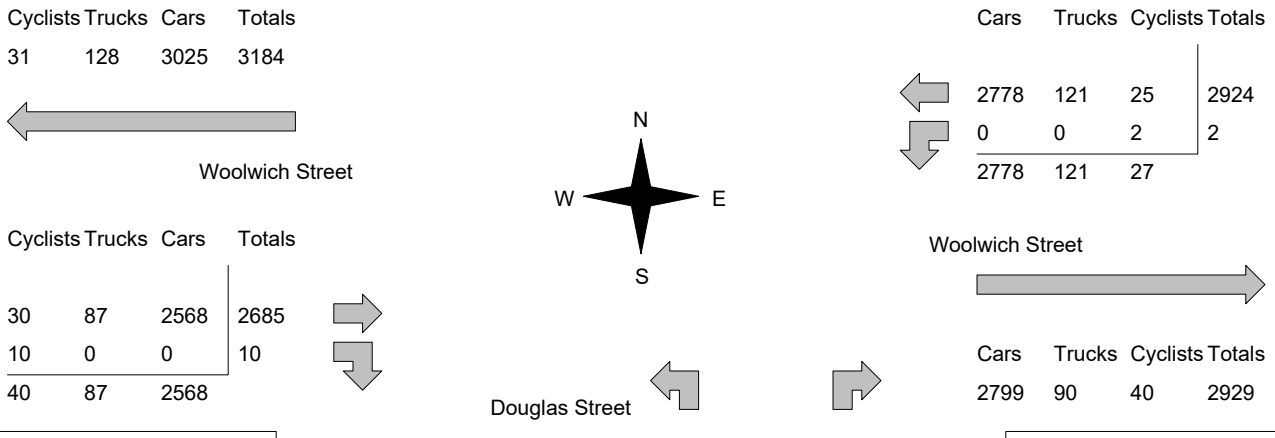
Comments

Woolwich Street & Douglas Street

Total Count Diagram

Municipality: Guelph	**Weather conditions:** Clear
Site #: 0000004505	**Person(s) who counted:**
Intersection: Woolwich Street & Douglas Street	
TFR File #: 2	
Count date: 25-Sep-2013	
**** Non-Signalized Intersection ****	**Major Road:** Woolwich Street runs W/E

East Leg Total: 5855
East Entering: 2926
East Peds: 44
Peds Cross: ⧖



Peds Cross:	⧖		Cars	0		Cars	247	231	478
West Peds:	61		Trucks	0		Trucks	7	3	10
West Entering:	2695		Cyclists	12		Cyclists	6	10	16
West Leg Total:	5879		Totals	12		Totals	260	244	

Peds Cross: ⋈
South Peds: 315
South Entering: 504
South Leg Total: 516

Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 15:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

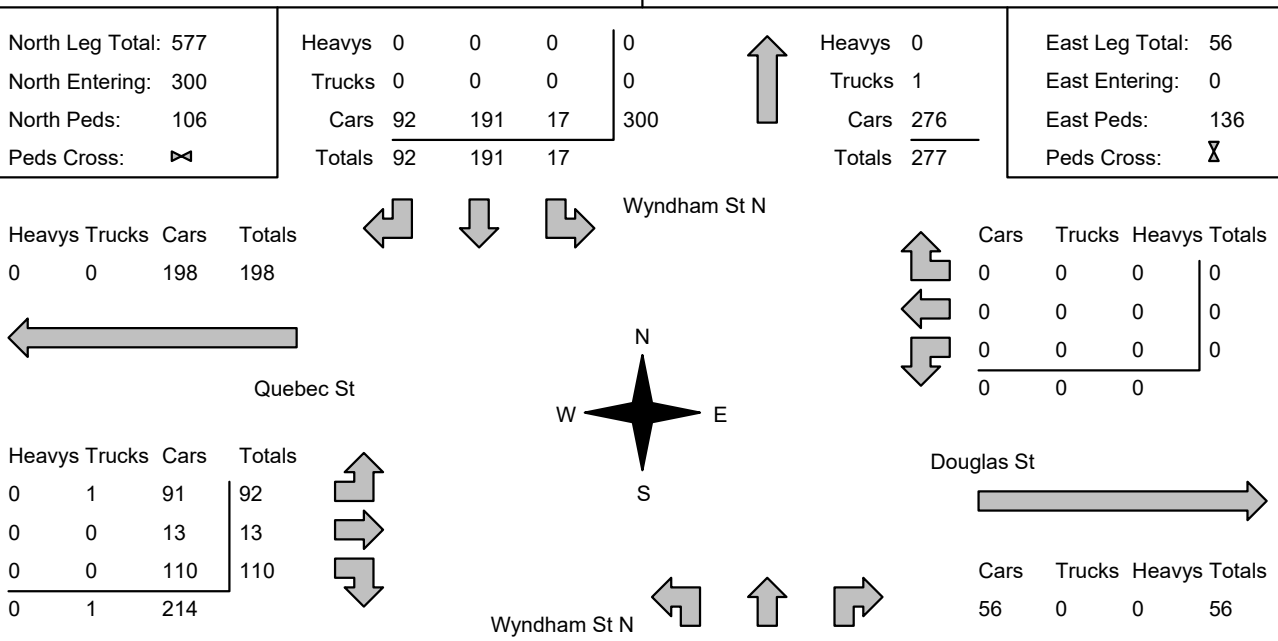
Municipality: Guelph
Site #: 1916000002
Intersection: Wyndham St N & Quebec St
TFR File #: 1
Count date: 28-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Total Count Diagram

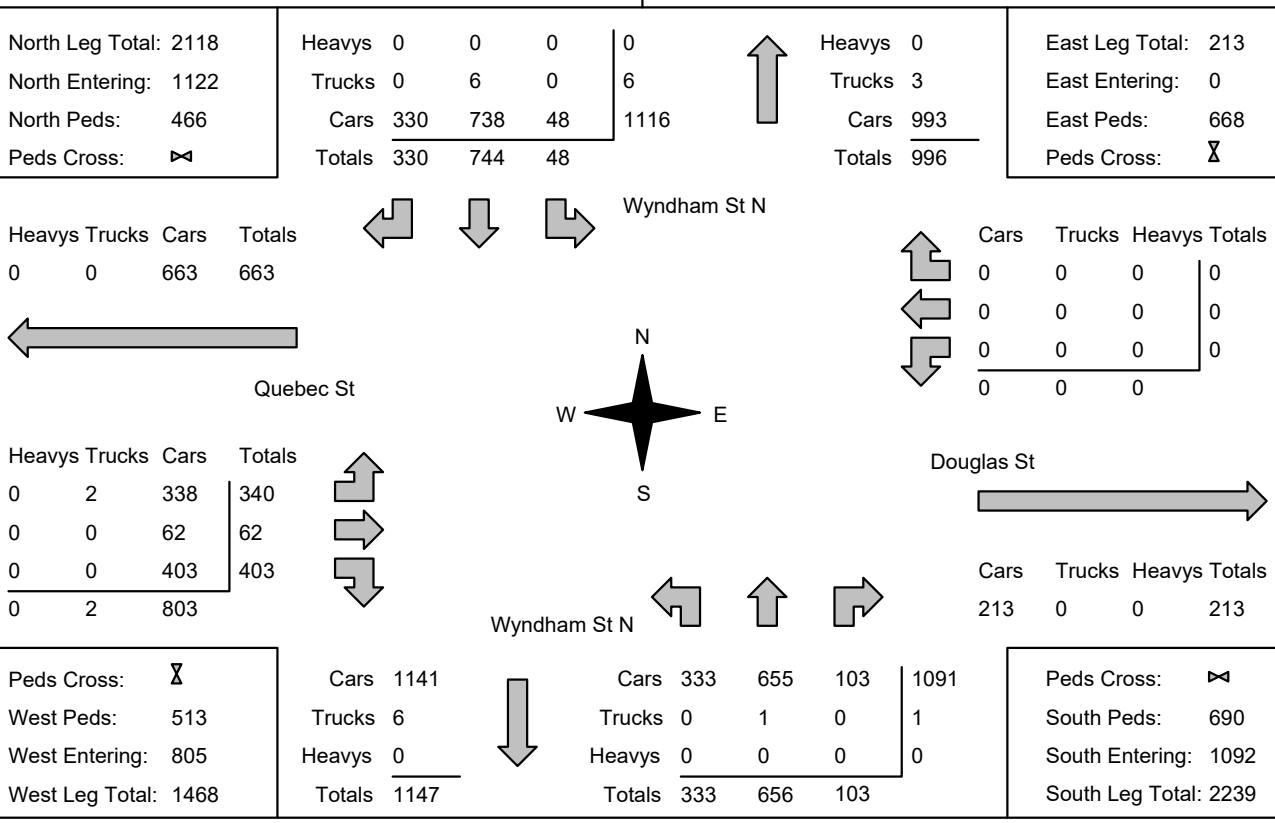
Municipality: Guelph
Site #: 1916000002
Intersection: Wyndham St N & Quebec St
TFR File #: 1
Count date: 28-Sep-19

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St @ Quebec St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

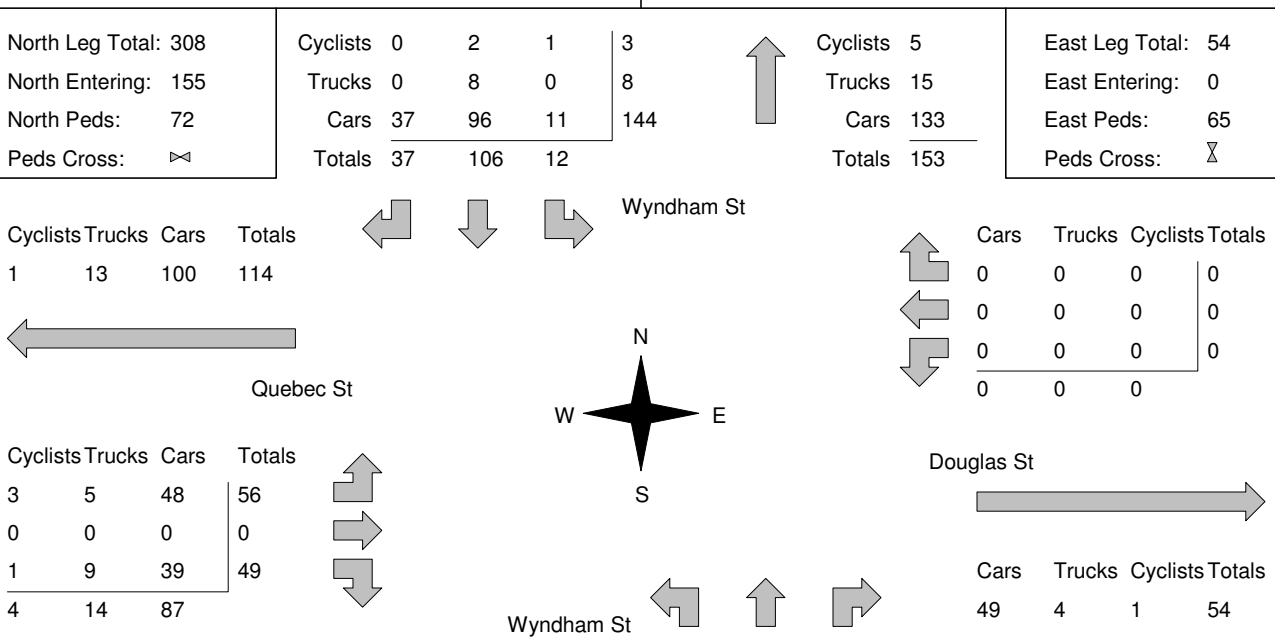
Municipality: Guelph
Site #: 0000000008
Intersection: Wyndham St & Quebec St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Marko
Mira

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Quebec St

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

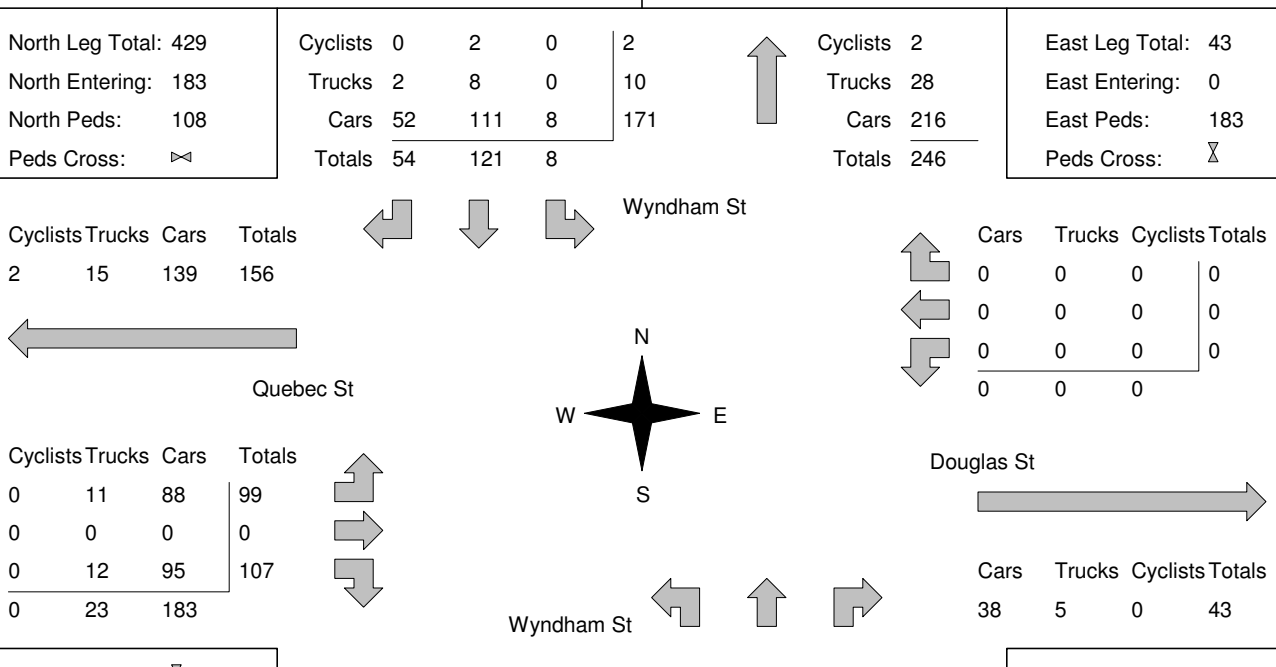
Municipality: Guelph
Site #: 0000000008
Intersection: Wyndham St & Quebec St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Marko
Mira

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Quebec St

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

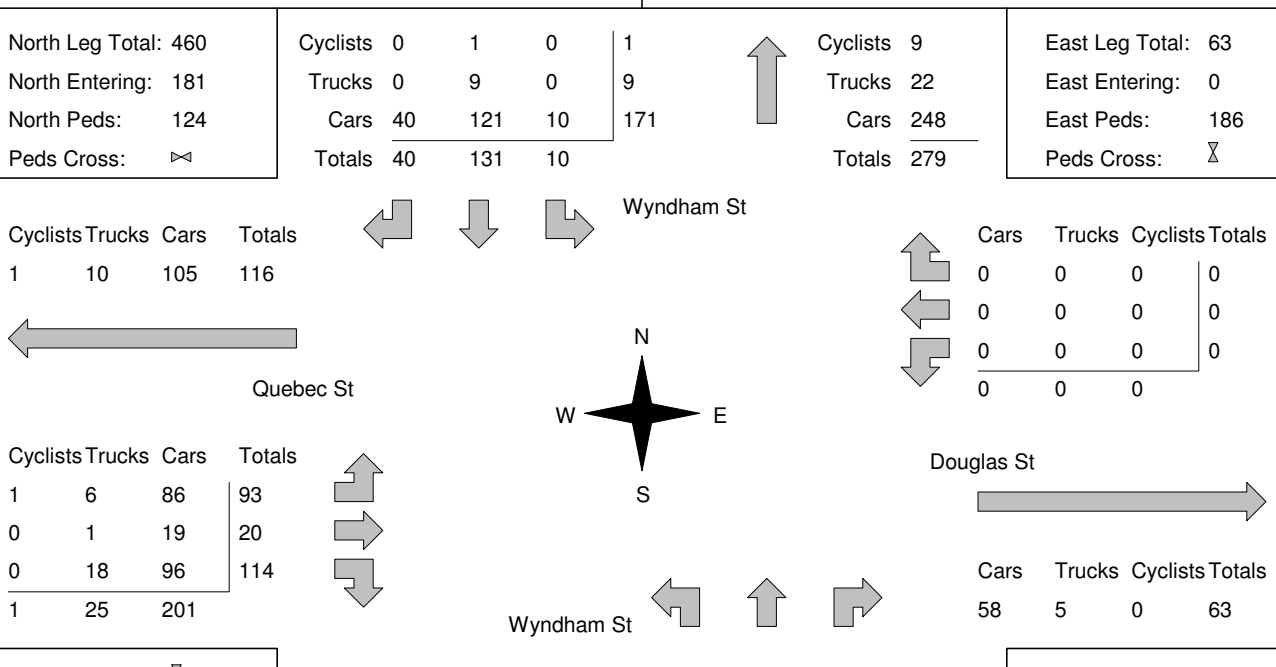
Municipality: Guelph
Site #: 0000000008
Intersection: Wyndham St & Quebec St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Marko
Mira

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Quebec St

Eight Hour Peak Diagram

Eight Hour Peak
From: 8:00:00
To: 16:00:00

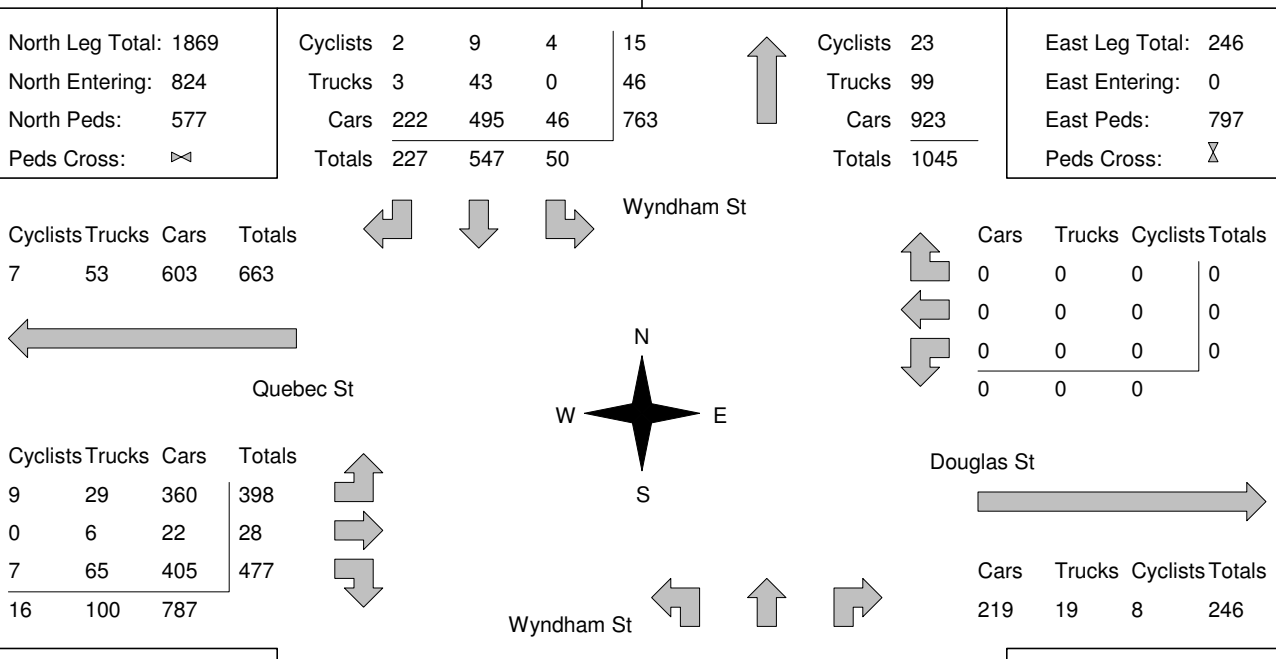
Municipality: Guelph
Site #: 0000000008
Intersection: Wyndham St & Quebec St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Marko
Mira

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Quebec St

Total Count Diagram

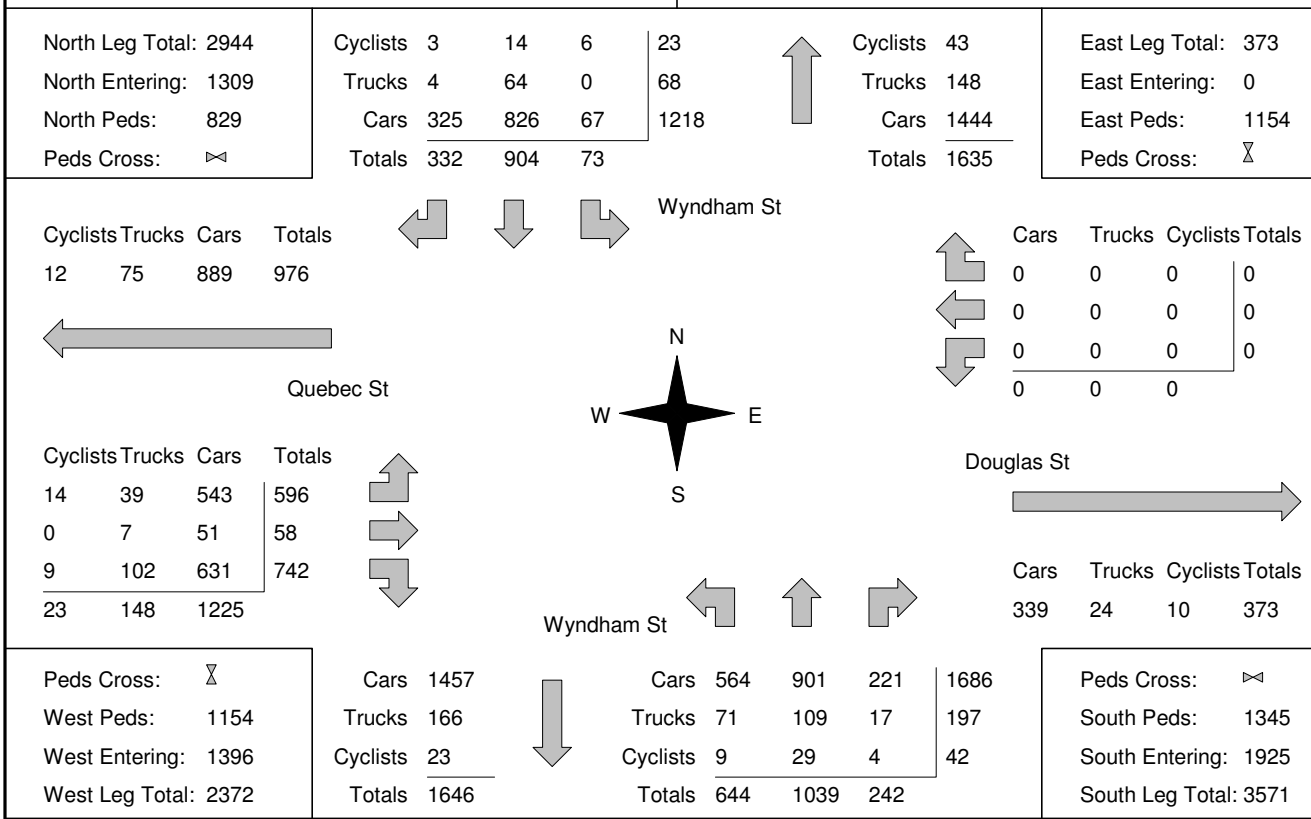
Municipality: Guelph
Site #: 0000000008
Intersection: Wyndham St & Quebec St
TFR File #: 1
Count date: 7-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Marko
Mira

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

SIM Traffic Consultants

Morning Peak Diagram

Specified Period
From: 8:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: GUELPH
Site #: 0000000005
Intersection: Wyndham St & Cork St
TFR File #: 1
Count date: 19-Nov-2015

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

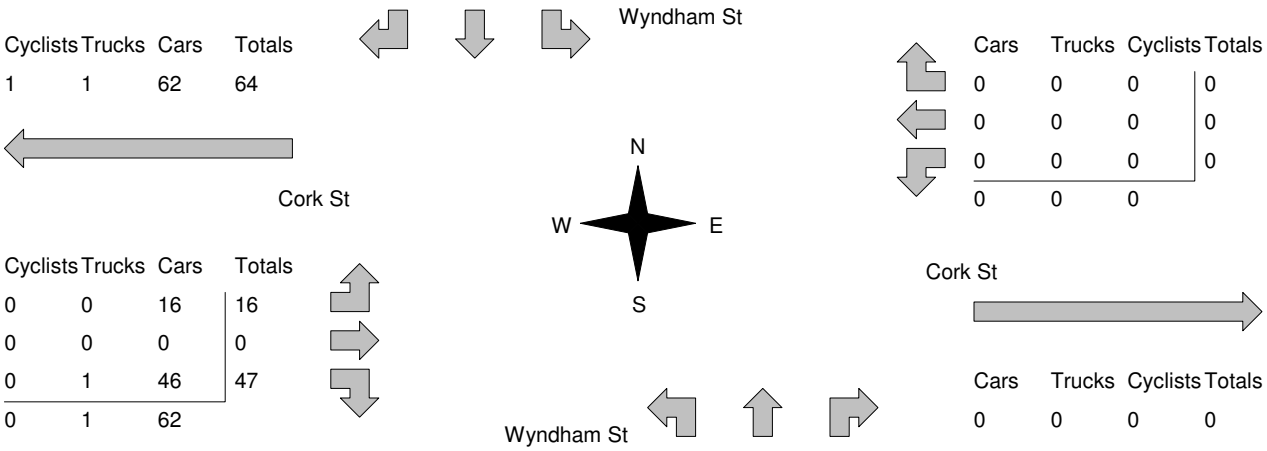
Major Road: Wyndham St runs N/S

North Leg Total:	485
North Entering:	257
North Peds:	49
Peds Cross:	⋈

Cyclists	0	1	0	1
Trucks	1	24	0	25
Cars	21	210	0	231
Totals	22	235	0	

Cyclists	5
Trucks	19
Cars	204
Totals	228

East Leg Total:	0
East Entering:	0
East Peds:	15
Peds Cross:	⧖



Peds Cross:	⧖
West Peds:	11
West Entering:	63
West Leg Total:	127

Cars	256			
Trucks	25			
Cyclists	1			
Totals	282			

Cars	41	188	0	229
Trucks	0	19	0	19
Cyclists	1	5	0	6
Totals	42	212	0	

Peds Cross:	⋈
South Peds:	35
South Entering:	254
South Leg Total:	536

Comments

SIM Traffic Consultants

Mid-day Peak Diagram

Specified Period
From: 12:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

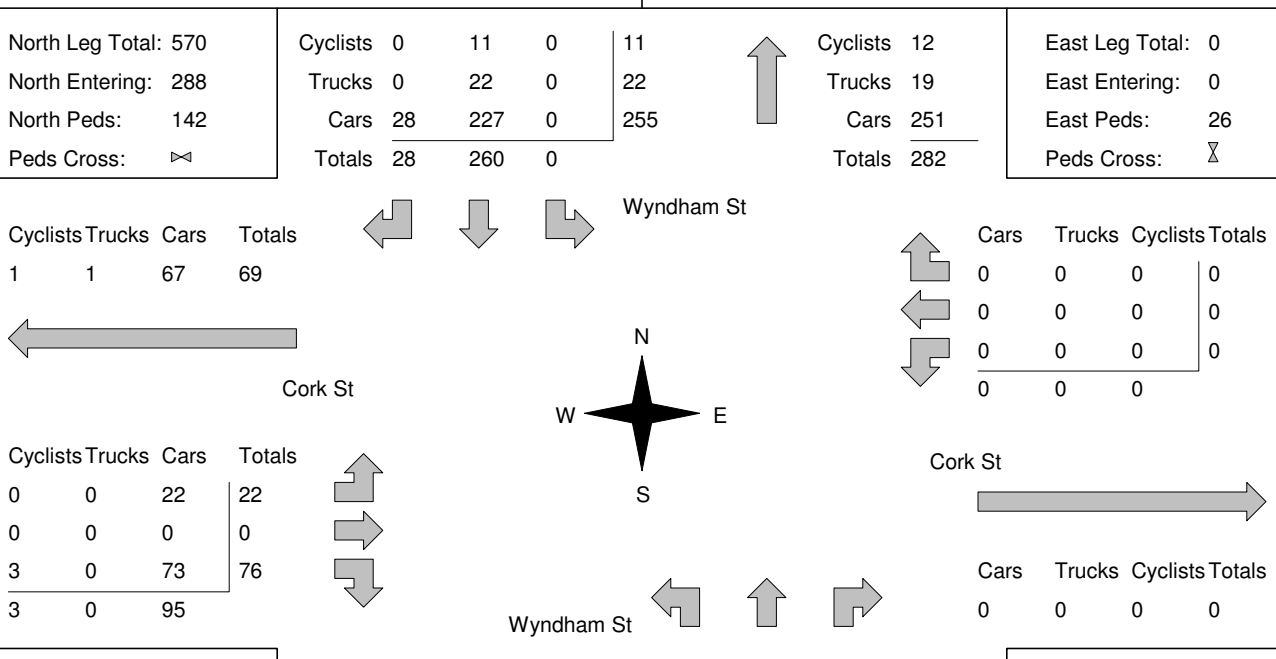
Municipality: GUELPH
Site #: 0000000005
Intersection: Wyndham St & Cork St
TFR File #: 1
Count date: 19-Nov-2015

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

SIM Traffic Consultants

Afternoon Peak Diagram

Specified Period
From: 16:30:00
To: 17:30:00

One Hour Peak
From: 16:30:00
To: 17:30:00

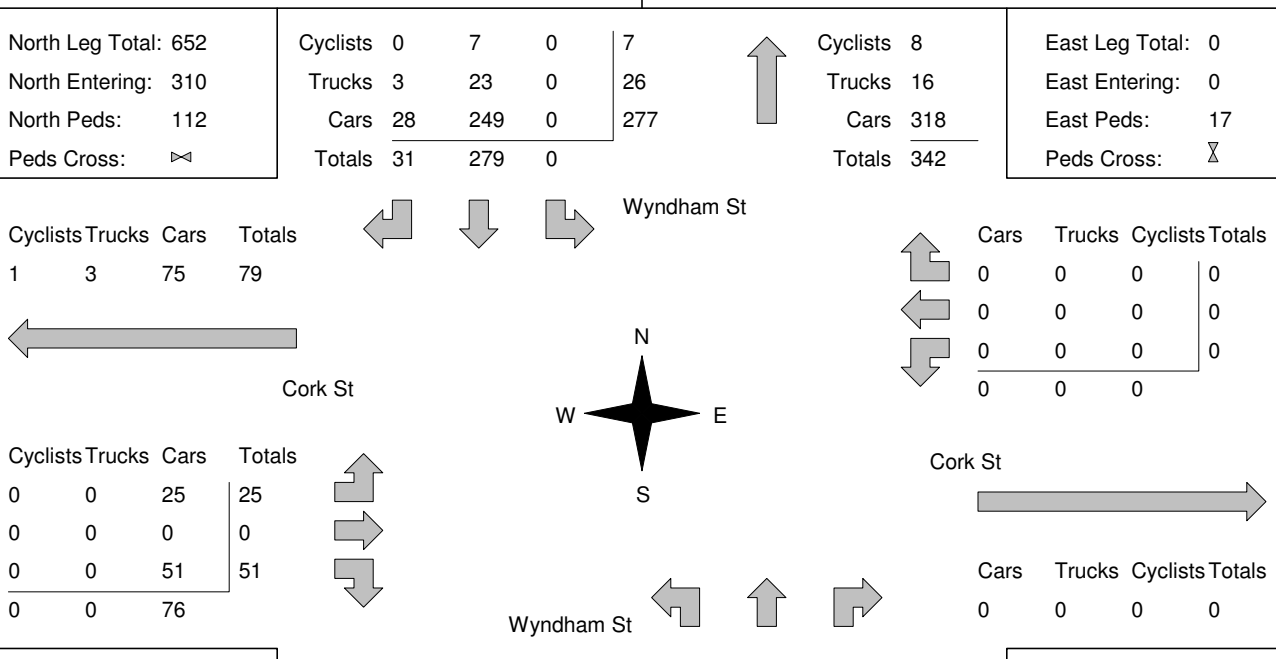
Municipality: GUELPH
Site #: 0000000005
Intersection: Wyndham St & Cork St
TFR File #: 1
Count date: 19-Nov-2015

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

SIM Traffic Consultants

Total Count Diagram

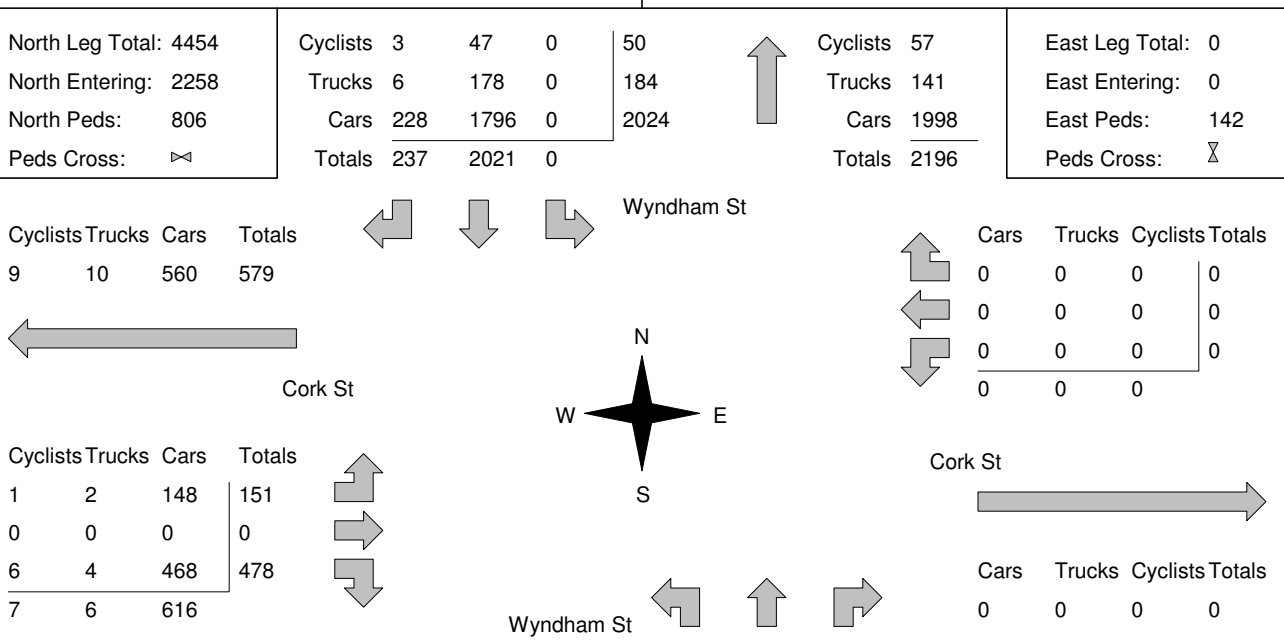
Municipality: GUELPH
Site #: 0000000005
Intersection: Wyndham St & Cork St
TFR File #: 1
Count date: 19-Nov-2015

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S

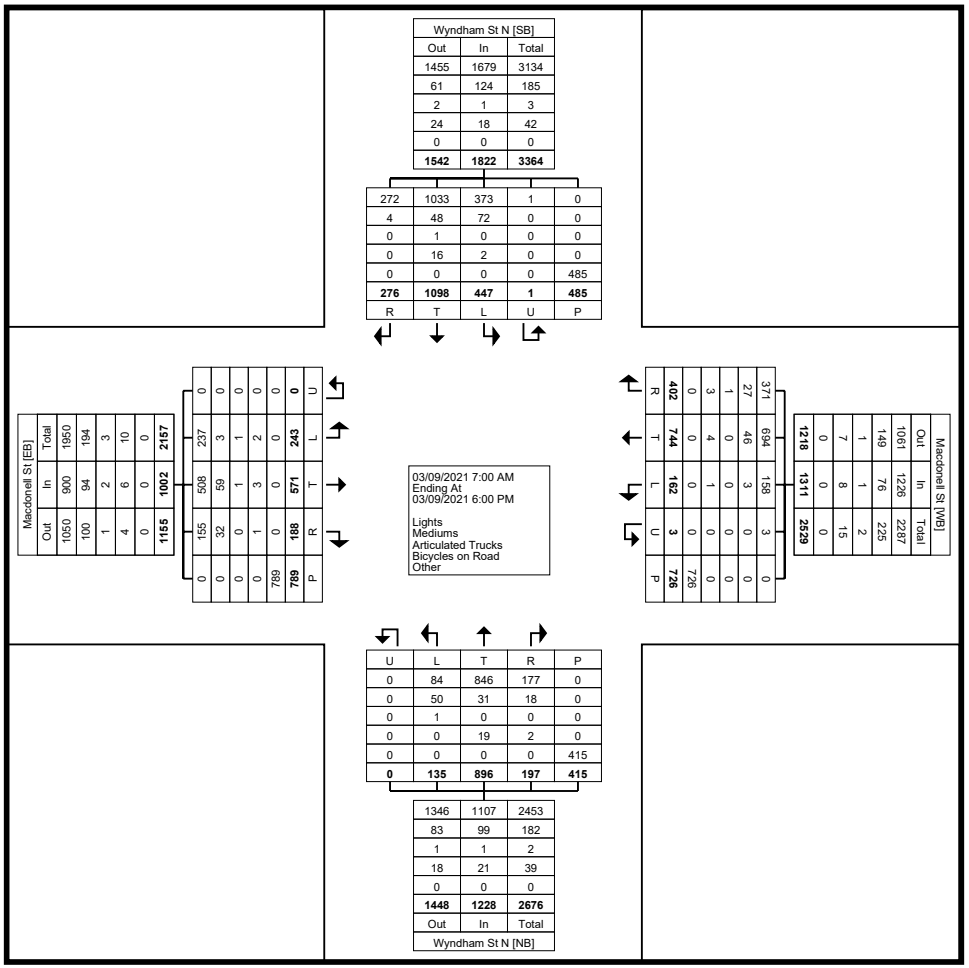


Comments

City of Guelph (ON) - Traffic Engineering
1 Carden Street

Guelph, Ontario, Canada N1H 3A1
519-822-1260 lauren.short@guelph.ca

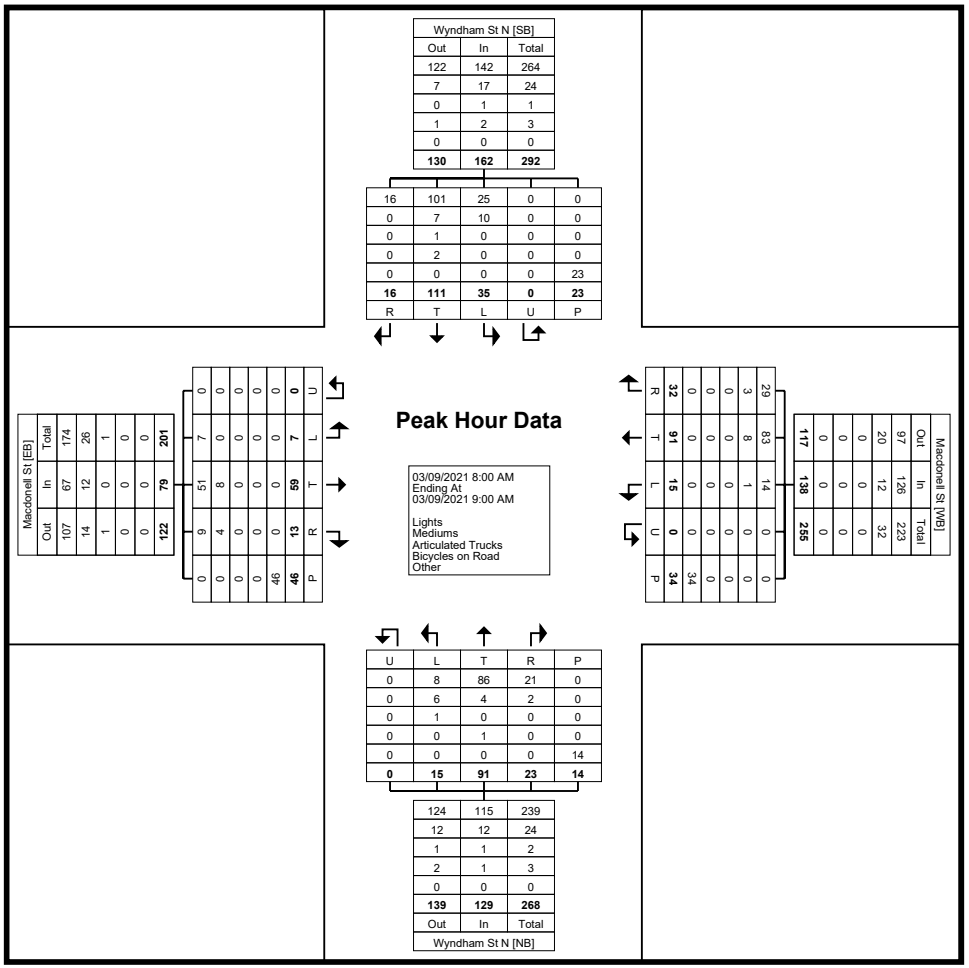
Count Name: Macdonell at Wyndham
Site Code:
Start Date: 03/09/2021



Turning Movement Data Plot

City of Guelph (ON) - Traffic Engineering
1 Carden Street

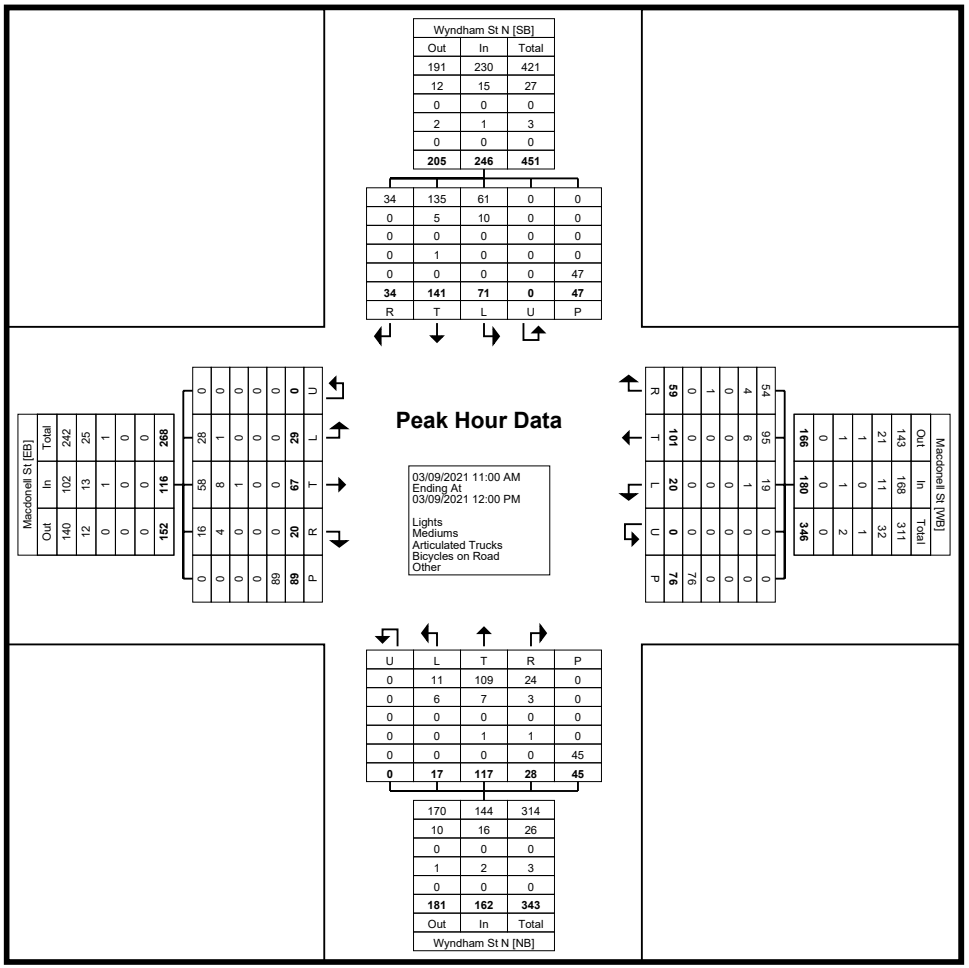
Guelph, Ontario, Canada N1H 3A1
519-822-1260 lauren.short@guelph.ca



Turning Movement Peak Hour Data Plot (8:00 AM)

City of Guelph (ON) - Traffic Engineering
1 Carden Street

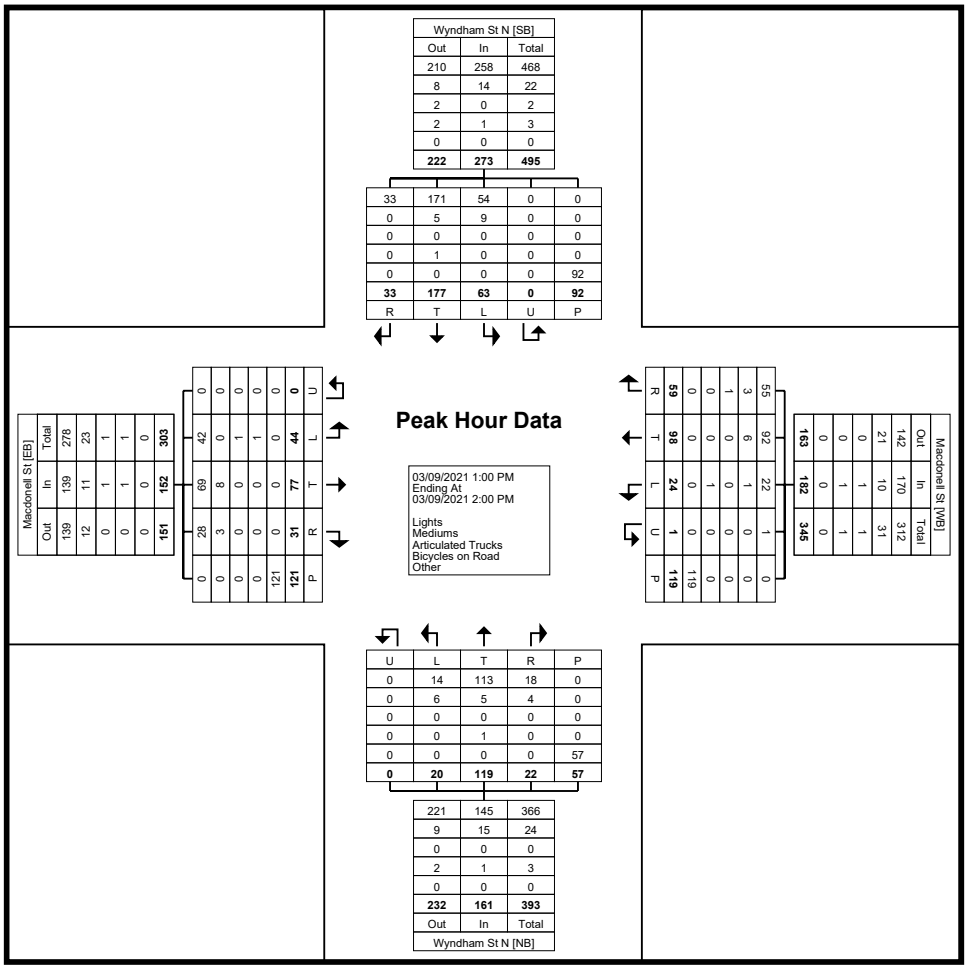
Guelph, Ontario, Canada N1H 3A1
519-822-1260 lauren.short@guelph.ca



Turning Movement Peak Hour Data Plot (11:00 AM)

City of Guelph (ON) - Traffic Engineering
1 Carden Street

Guelph, Ontario, Canada N1H 3A1
519-822-1260 lauren.short@guelph.ca

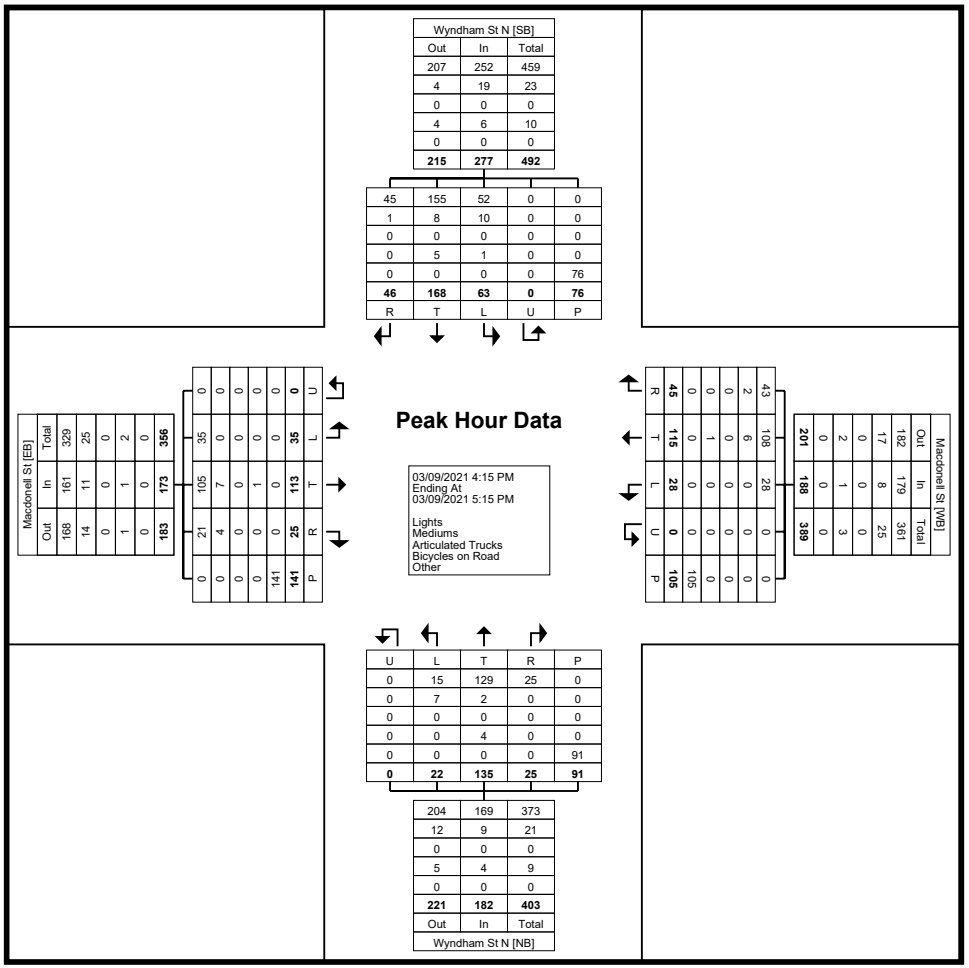


Turning Movement Peak Hour Data Plot (1:00 PM)

City of Guelph (ON) - Traffic Engineering
1 Carden Street

Guelph, Ontario, Canada N1H 3A1
519-822-1260 lauren.short@guelph.ca

Count Name: Macdonell at Wyndham
Site Code:
Start Date: 03/09/2021



Turning Movement Peak Hour Data Plot (4:15 PM)

Wyndham St @ Carden St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

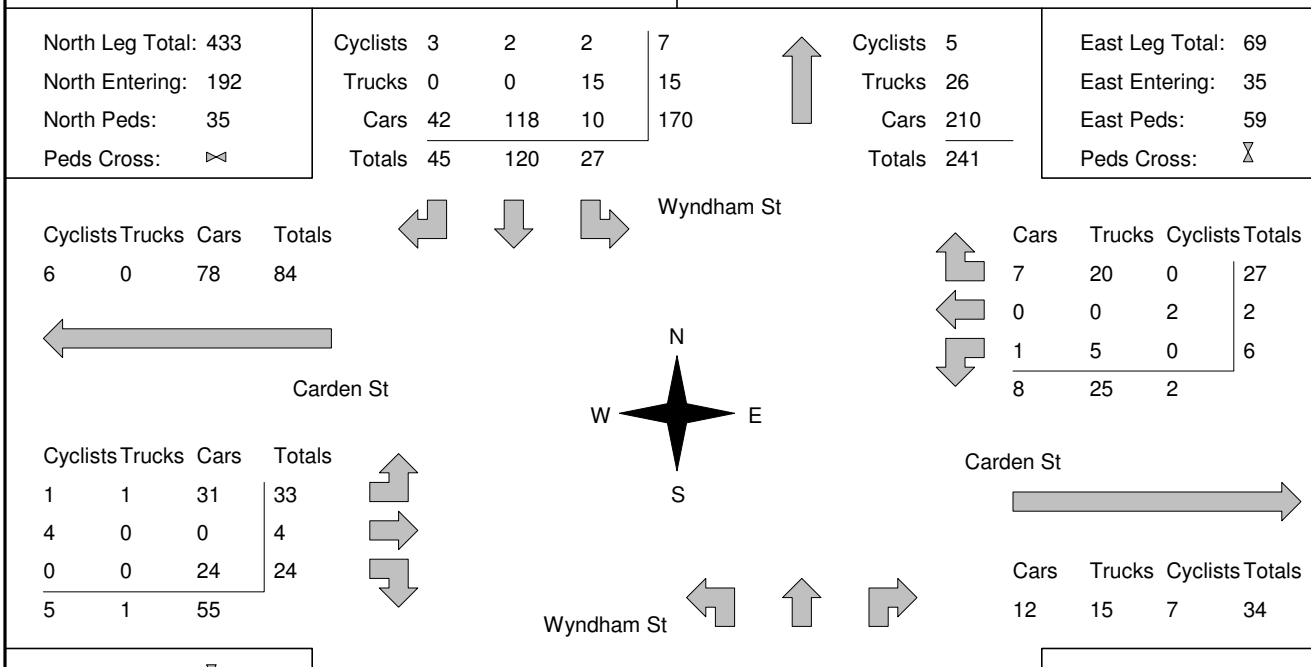
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Carden St
TFR File #: 1
Count date: 6-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Nancy

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Carden St

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:15:00
To: 12:15:00

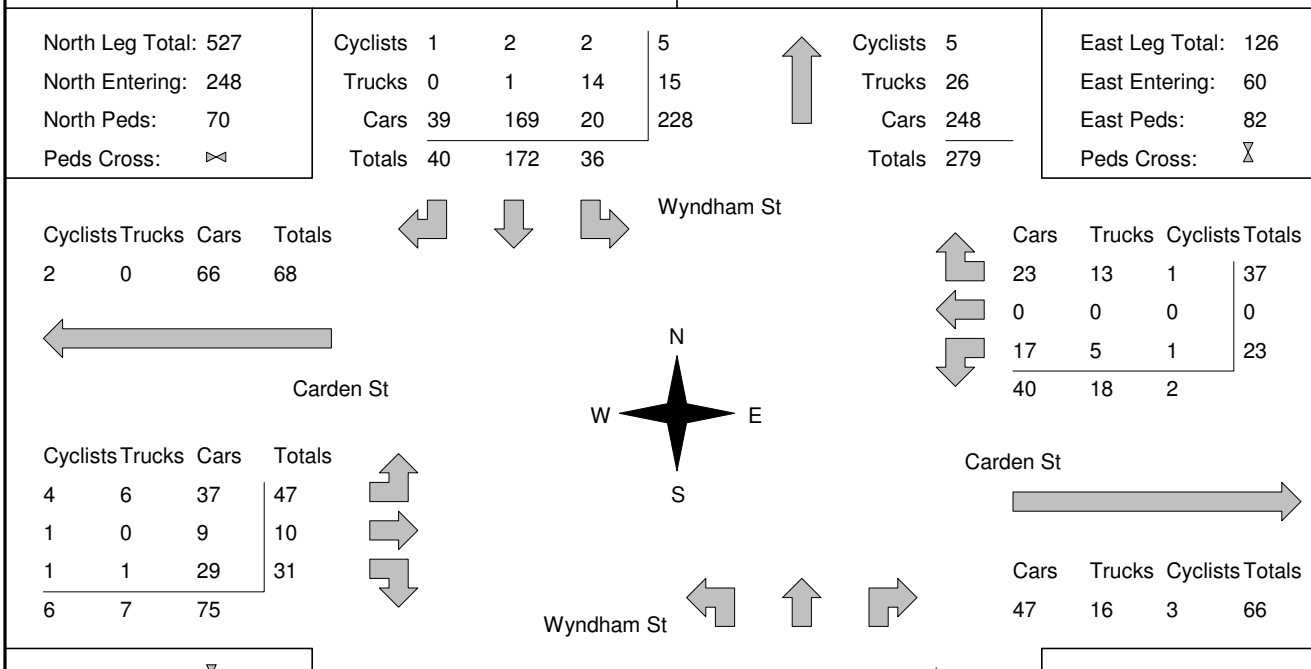
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Carden St
TFR File #: 1
Count date: 6-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Nancy

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Carden St

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:15:00
To: 17:15:00

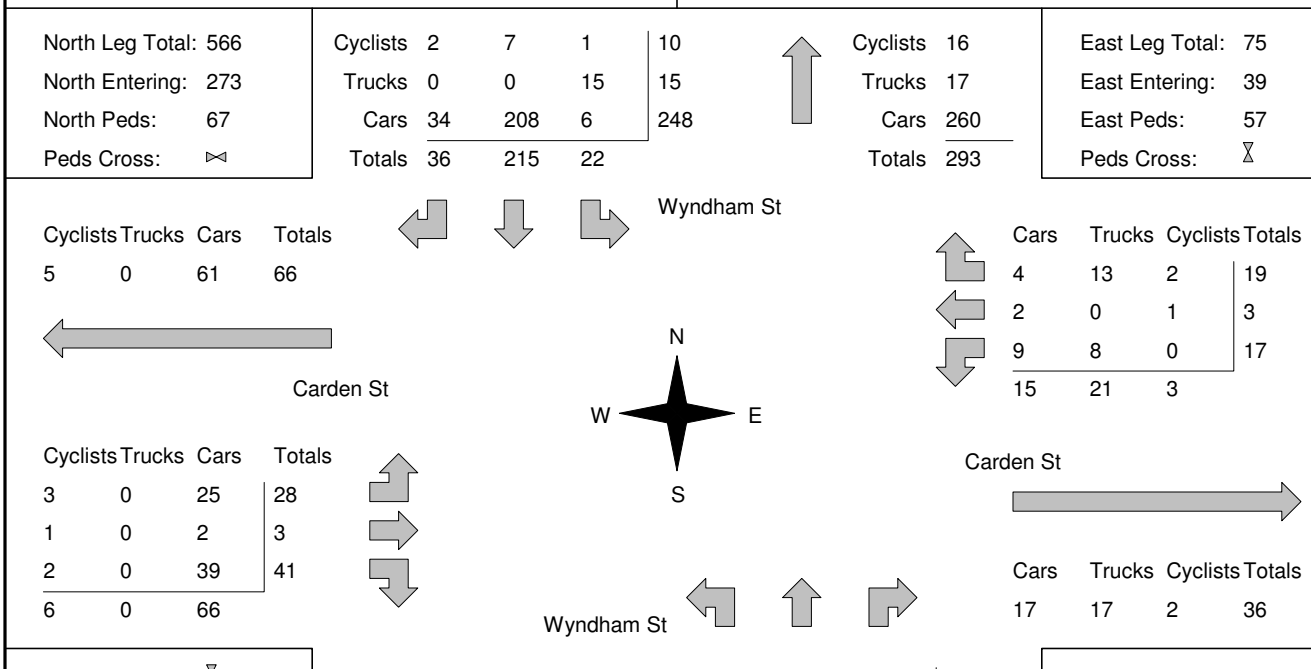
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Carden St
TFR File #: 1
Count date: 6-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Nancy

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Carden St

Eight Hour Peak Diagram

Eight Hour Peak
From: 8:00:00
To: 16:00:00

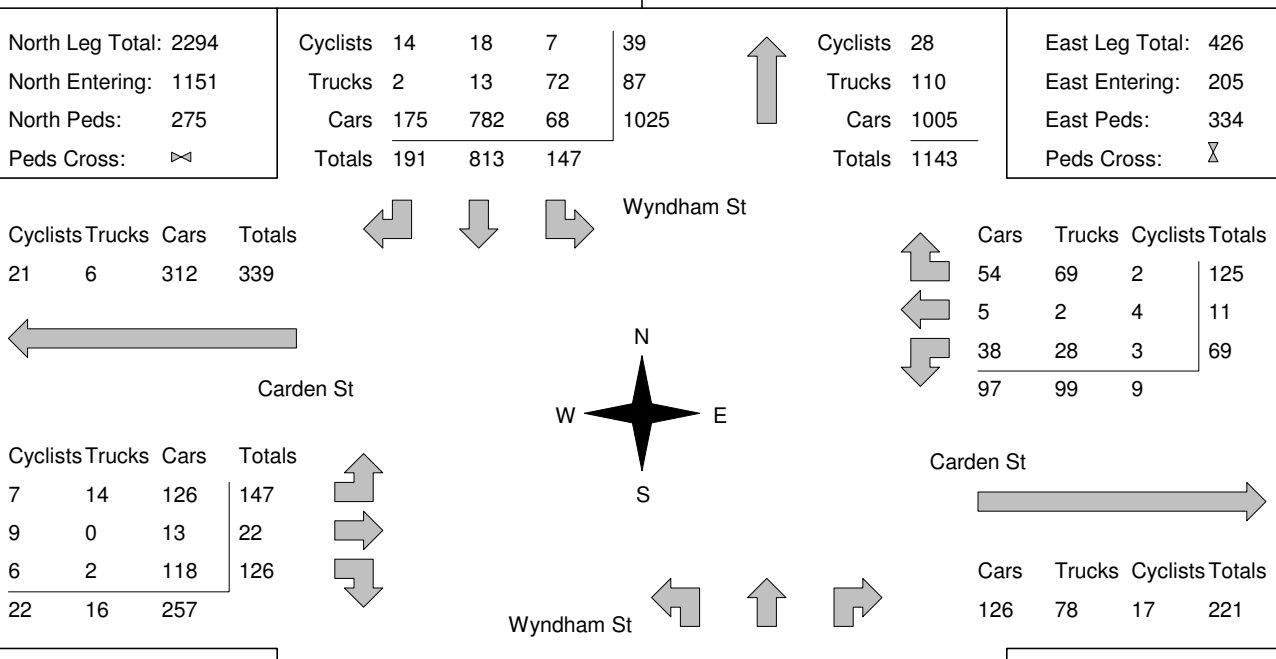
Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Carden St
TFR File #: 1
Count date: 6-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Nancy

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S



Comments

Wyndham St @ Carden St

Total Count Diagram

Municipality: Guelph
Site #: 0000000005
Intersection: Wyndham St & Carden St
TFR File #: 1
Count date: 6-Jun-2018

Weather conditions:
Sunny

Person(s) who counted:
Nik
Nancy

**** Signalized Intersection ****

Major Road: Wyndham St runs N/S

North Leg Total:	3607			
North Entering:	1787			
North Peds:	427			
Peds Cross:	⋈			

Cyclists	18	34	8	60
Trucks	2	15	111	128
Cars	238	1250	111	1599
Totals	258	1299	230	

Cyclists	60	
Trucks	164	
Cars	1596	
Totals	1820	

East Leg Total:	728
East Entering:	366
East Peds:	476
Peds Cross:	⧖

Wyndham St

Cyclists	Trucks	Cars	Totals
32	6	443	481

Cars	Trucks	Cyclists	Totals
95	112	8	215
11	2	7	20
78	49	4	131
184	163	19	

Carden St

N
W E
S

Cyclists	Trucks	Cars	Totals
15	14	167	196
14	0	20	34
10	2	187	199
39	16	374	

Carden St

Cars	Trucks	Cyclists	Totals
216	119	27	362

Wyndham St

Peds Cross:	⧖	
West Peds:	548	
West Entering:	429	
West Leg Total:	910	

Cars	1515			
Trucks	66			
Cyclists	48			
Totals	1629			

Cars	194	1334	85	1613
Trucks	2	38	8	48
Cyclists	7	37	5	49
Totals	203	1409	98	

Peds Cross:	⋈
South Peds:	425
South Entering:	1710
South Leg Total:	3339

Comments

Wyndham St N @ Douglas St-Quebec St

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Guelph
Site #: 0000000001
Intersection: Wyndham St N & Douglas St
TFR File #: 1
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S

North Leg Total:	575			
North Entering:	303			
North Peds:	149			
Peds Cross:	⋈			
Heavys	0	9	0	9
Trucks	1	1	0	2
Cars	114	161	17	292
Totals	115	171	17	
Heavys	2			
Trucks	1			
Cars	269			
Totals	272			
East Leg Total:	84			
East Entering:	0			
East Peds:	187			
Peds Cross:	⧖			

Wyndham St N

Heavys	Trucks	Cars	Totals
2	1	199	202

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

Quebec St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	117	117
0	0	20	20
6	0	118	124
6	0	255	

Douglas St

Cars	Trucks	Heavys	Totals
84	0	0	84

Wyndham St N

Peds Cross:	⧖			
West Peds:	112			
West Entering:	261			
West Leg Total:	463			
Cars	279			
Trucks	1			
Heavys	15			
Totals	295			
Cars	85	152	47	284
Trucks	0	1	0	1
Heavys	2	2	0	4
Totals	87	155	47	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	289			
South Leg Total:	584			

Comments

Wyndham St N @ Douglas St-Quebec St

Total Count Diagram

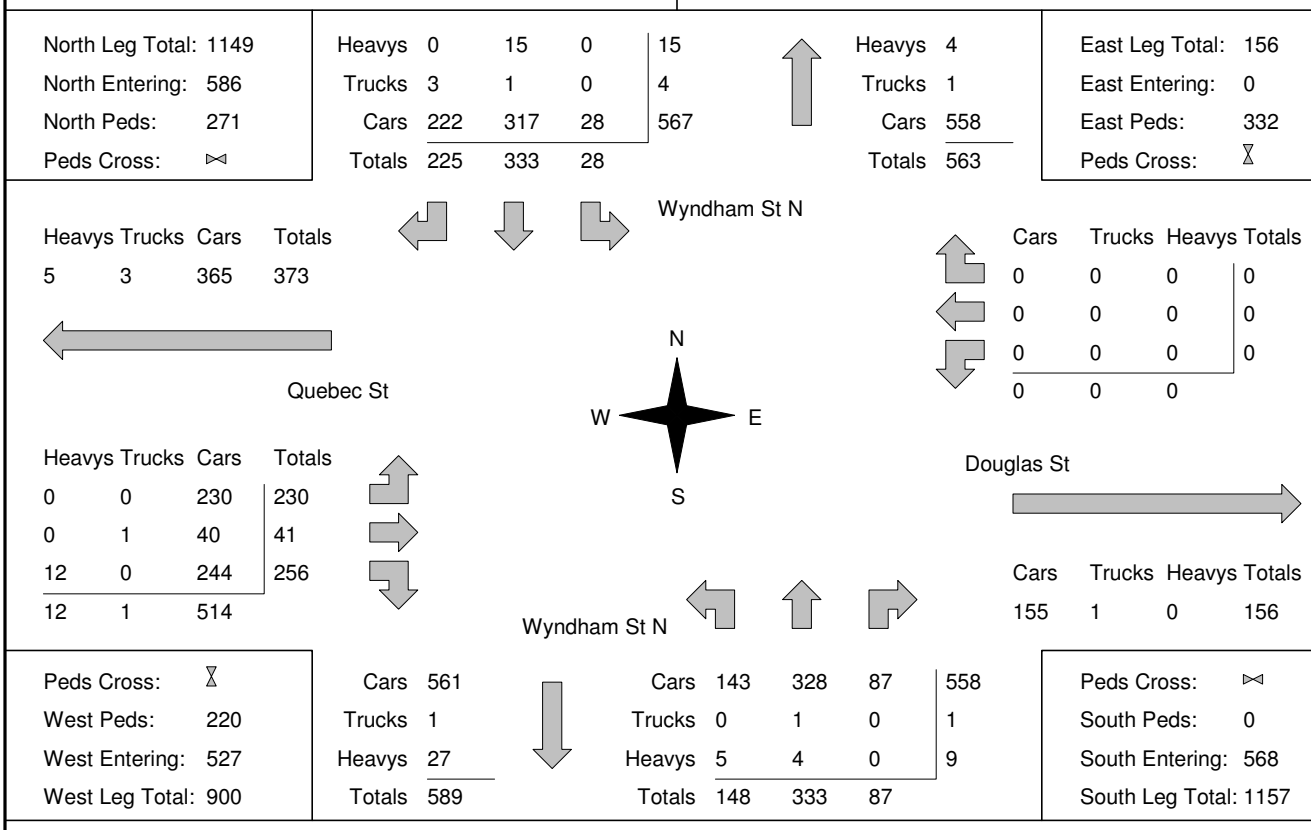
Municipality: Guelph
Site #: 0000000001
Intersection: Wyndham St N & Douglas St
TFR File #: 1
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St N @ Cork St E

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

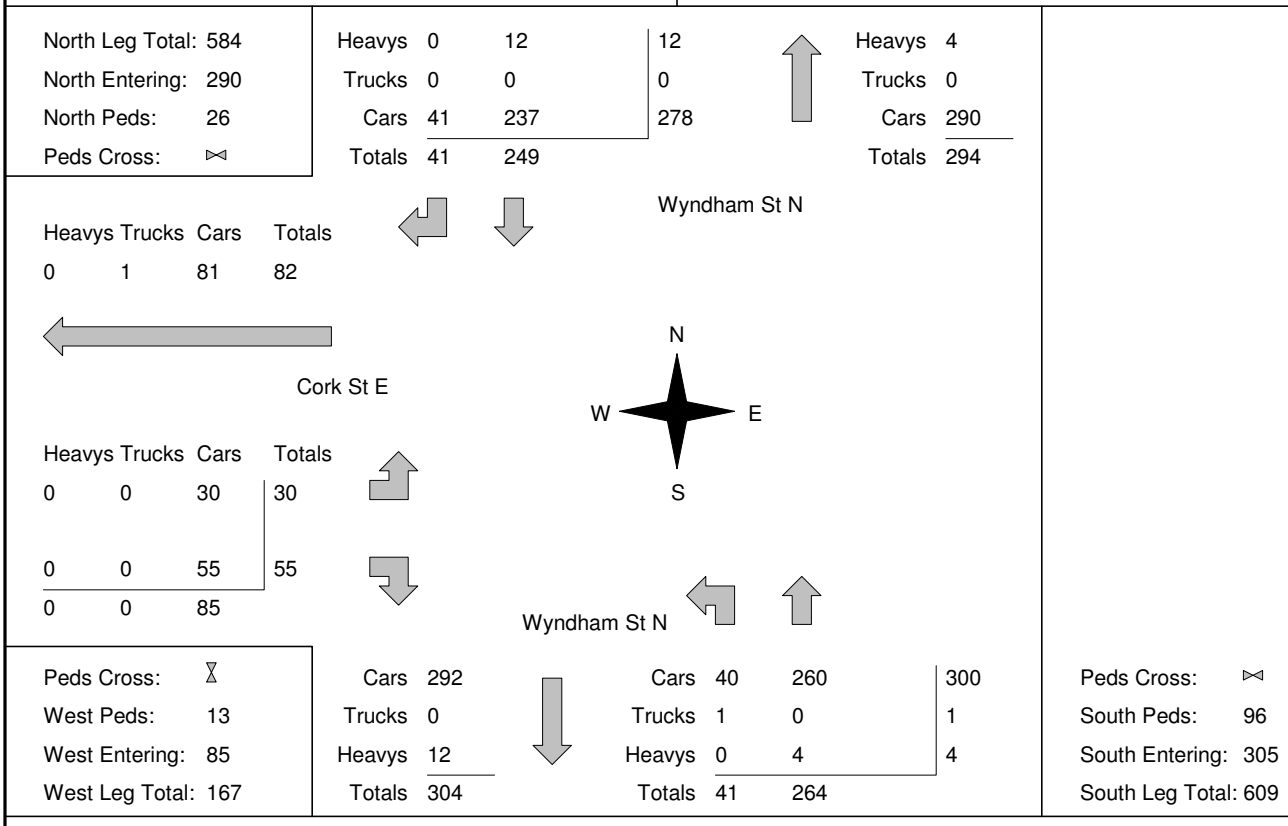
Municipality: Guelph
Site #: 0000000002
Intersection: Wyndham St N & Cork St E
TFR File #: 2
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St N @ Cork St E

Total Count Diagram

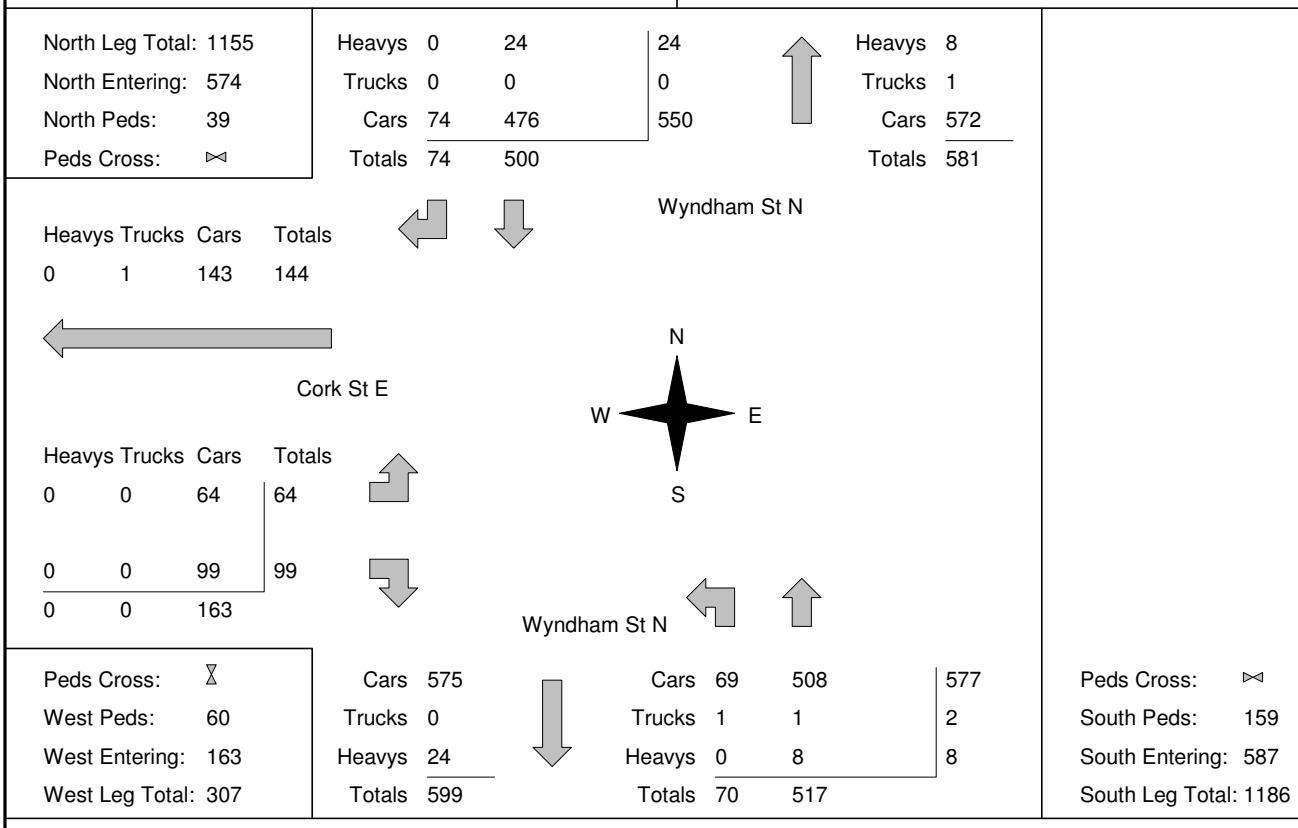
Municipality: Guelph
Site #: 0000000002
Intersection: Wyndham St N & Cork St E
TFR File #: 2
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St N @ Macdonell St

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:00:00
To: 13:00:00

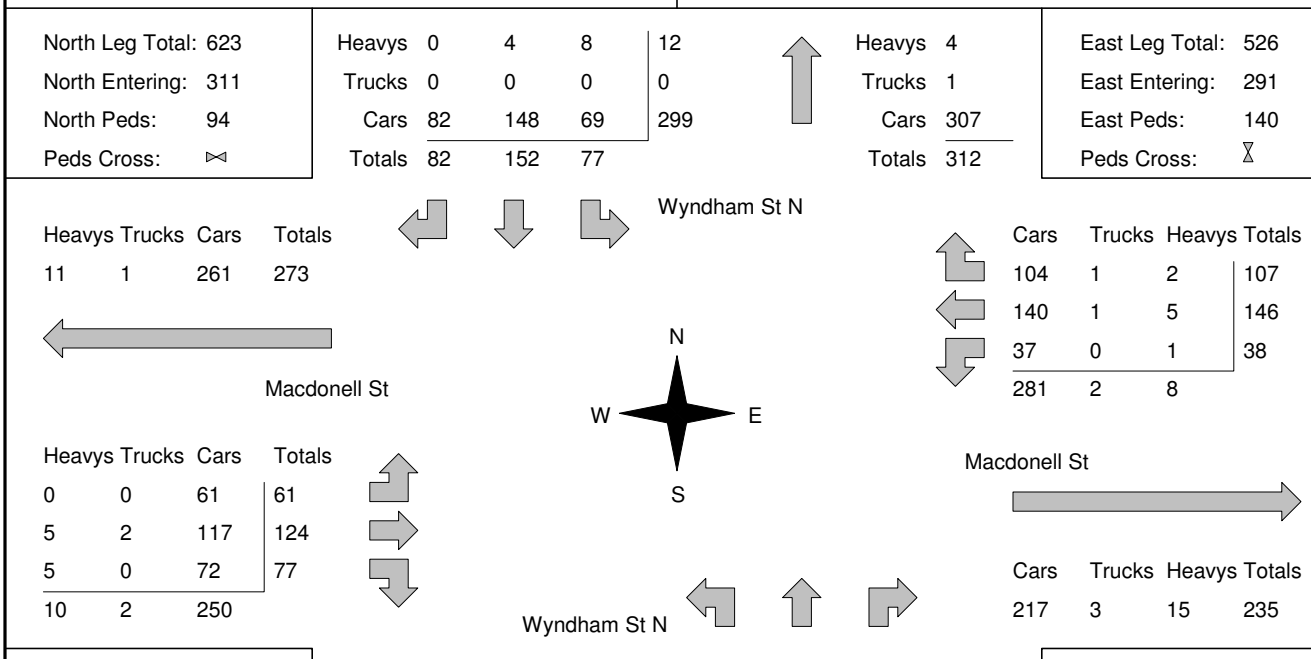
Municipality: Guelph
Site #: 0000000003
Intersection: Wyndham St N & Macdonell St
TFR File #: 3
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St N @ Macdonell St

Total Count Diagram

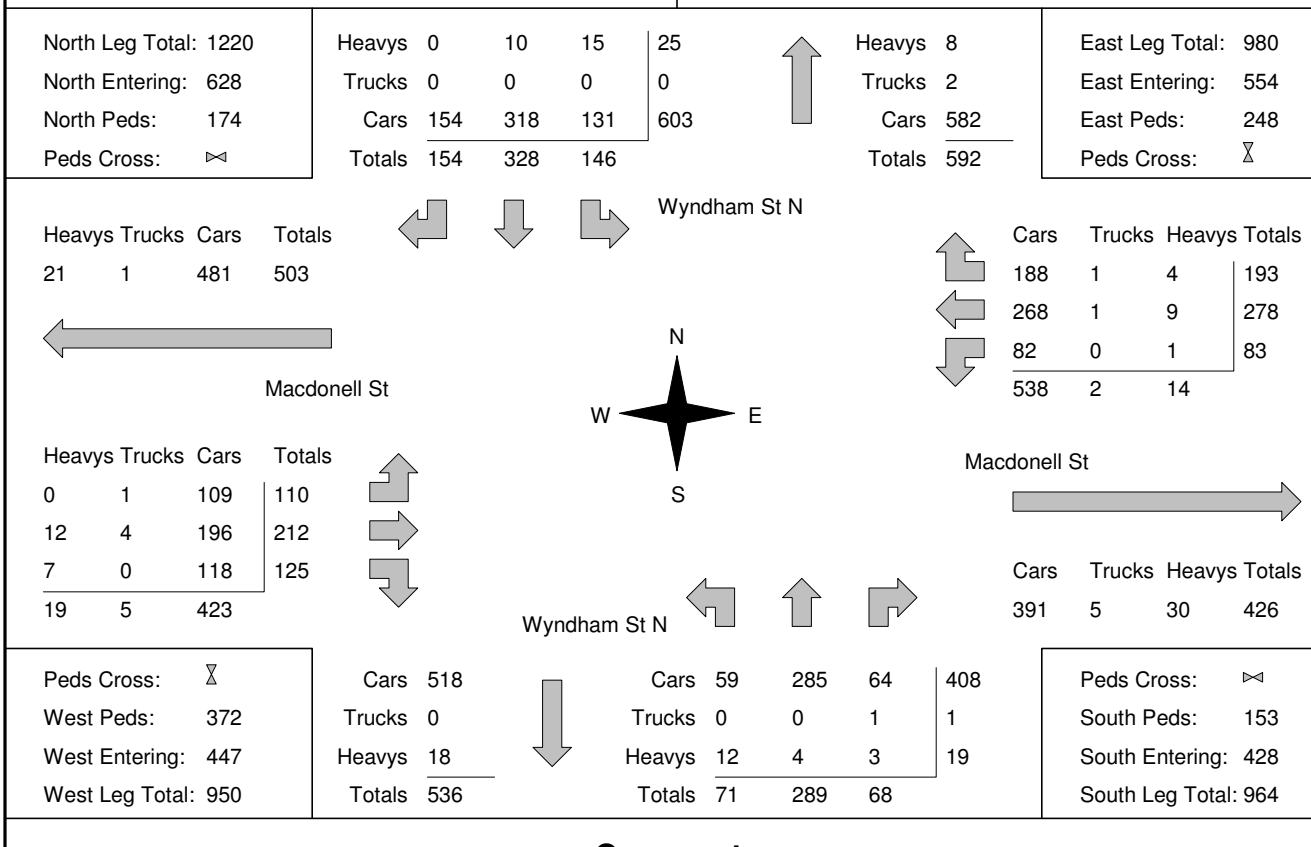
Municipality: Guelph
Site #: 0000000003
Intersection: Wyndham St N & Macdonell St
TFR File #: 3
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Wyndham St N runs N/S



Comments

Wyndham St N @ Carden St

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Municipality: Guelph
Site #: 0000000004
Intersection: Wyndham St N & Carden St
TFR File #: 4
Count date: 4-Dec-2021

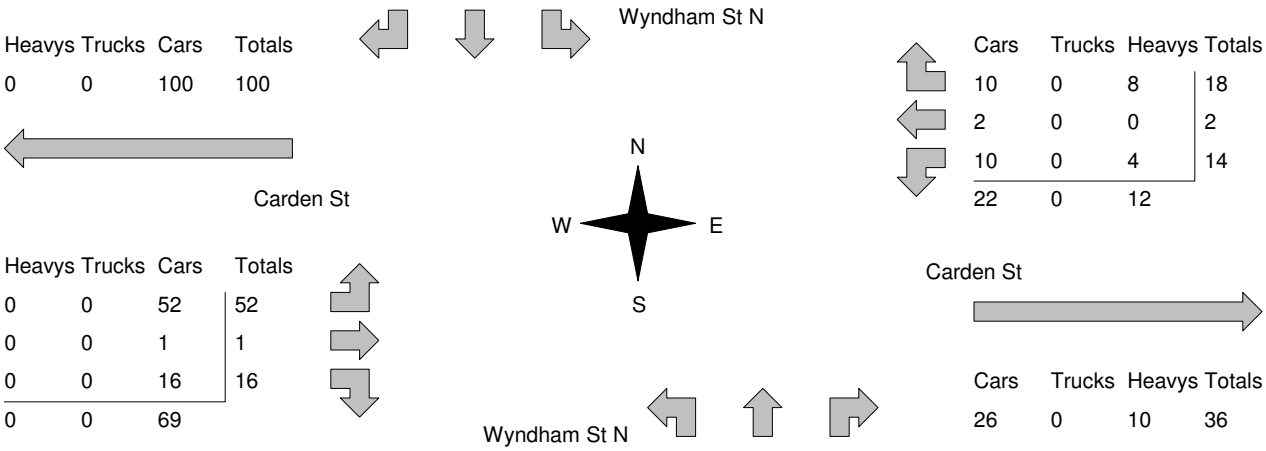
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Wyndham St N runs N/S

North Leg Total:	497			
North Entering:	271			
North Peds:	52			
Peds Cross:	⋈			
Heavys	0	1	8	9
Trucks	0	0	0	0
Cars	79	175	8	262
Totals	79	176	16	
Heavys	10			
Trucks	1			
Cars	215			
Totals	226			
East Leg Total:	70			
East Entering:	34			
East Peds:	48			
Peds Cross:	⧖			



Peds Cross:	⧖			
West Peds:	45			
West Entering:	69			
West Leg Total:	169			
Cars	201			
Trucks	0			
Heavys	5			
Totals	206			
Cars	19	153	17	189
Trucks	0	1	0	1
Heavys	0	2	2	4
Totals	19	156	19	
Peds Cross:	⋈			
South Peds:	21			
South Entering:	194			
South Leg Total:	400			

Comments

Wyndham St N @ Carden St

Total Count Diagram

Municipality: Guelph
Site #: 0000000004
Intersection: Wyndham St N & Carden St
TFR File #: 4
Count date: 4-Dec-2021

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Wyndham St N runs N/S

North Leg Total:	960			
North Entering:	533			
North Peds:	98			
Peds Cross:	⋈			
Heavys	0	1	16	17
Trucks	0	1	0	1
Cars	139	355	21	515
Totals	139	357	37	
Heavys	19			
Trucks	1			
Cars	407			
Totals	427			
East Leg Total:	135			
East Entering:	69			
East Peds:	77			
Peds Cross:	⧖			

Wyndham St N

Heavys	Trucks	Cars	Totals
0	0	176	176

Carden St

Cars	Trucks	Heavys	Totals
20	0	16	36
6	0	0	6
18	0	9	27
44	0	25	

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	93	93
0	0	3	3
0	0	35	35
0	0	131	

Carden St

Cars	Trucks	Heavys	Totals
46	0	20	66

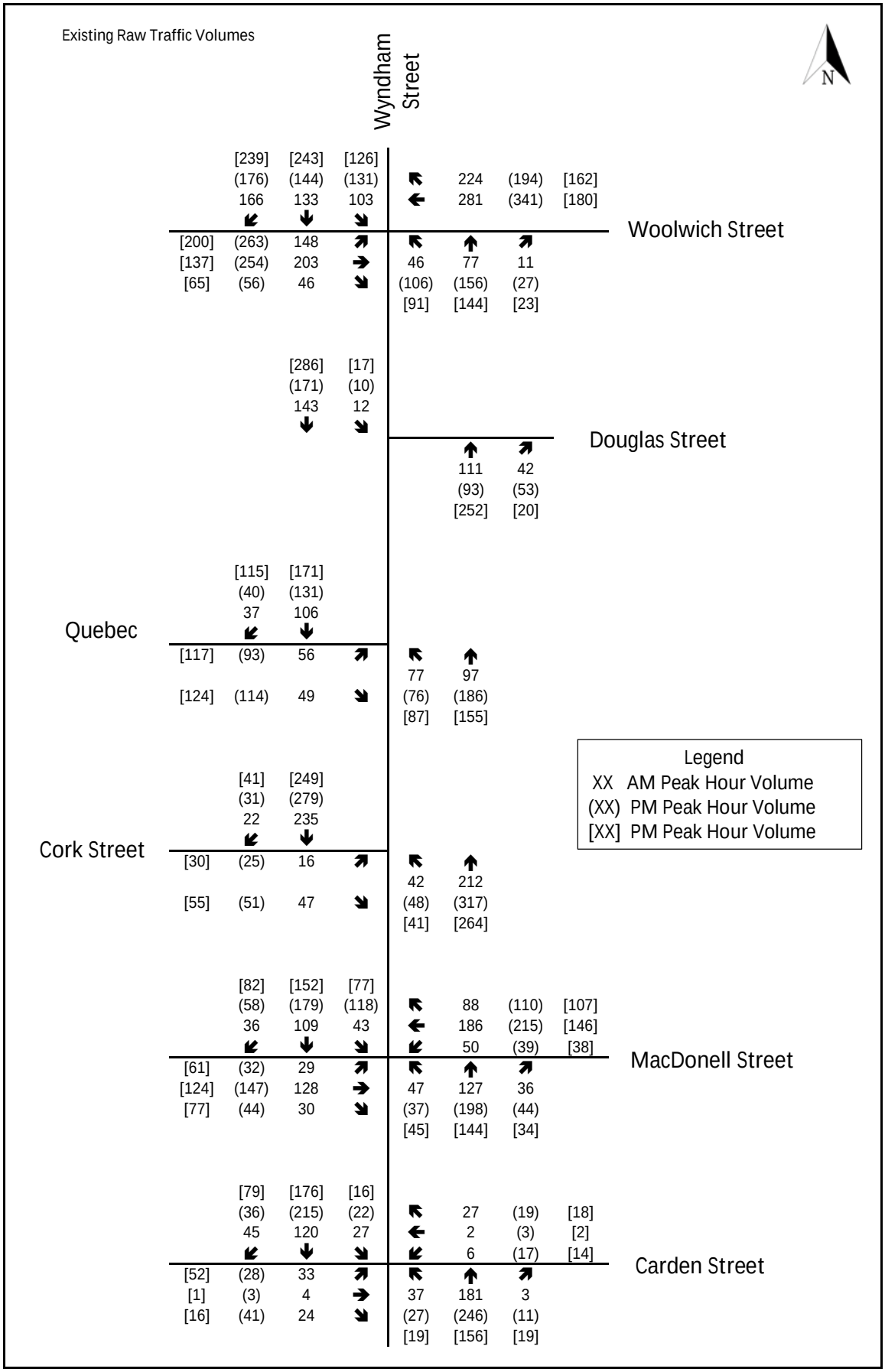
Wyndham St N

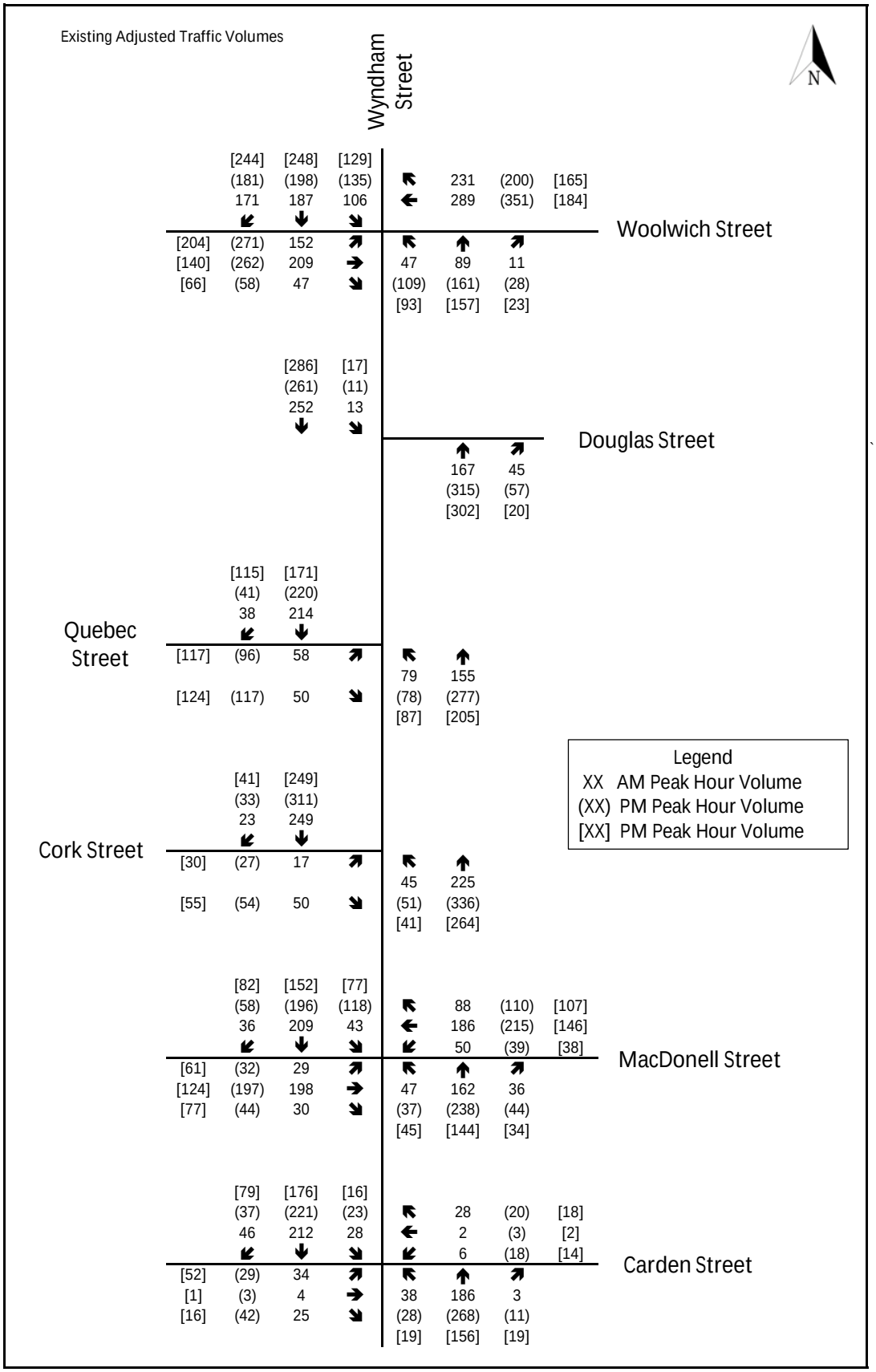
Peds Cross:	⧖			
West Peds:	88			
West Entering:	131			
West Leg Total:	307			
Cars	408			
Trucks	1			
Heavys	10			
Totals	419			
Cars	31	294	22	347
Trucks	0	1	0	1
Heavys	0	3	4	7
Totals	31	298	26	
Peds Cross:	⋈			
South Peds:	41			
South Entering:	355			
South Leg Total:	774			

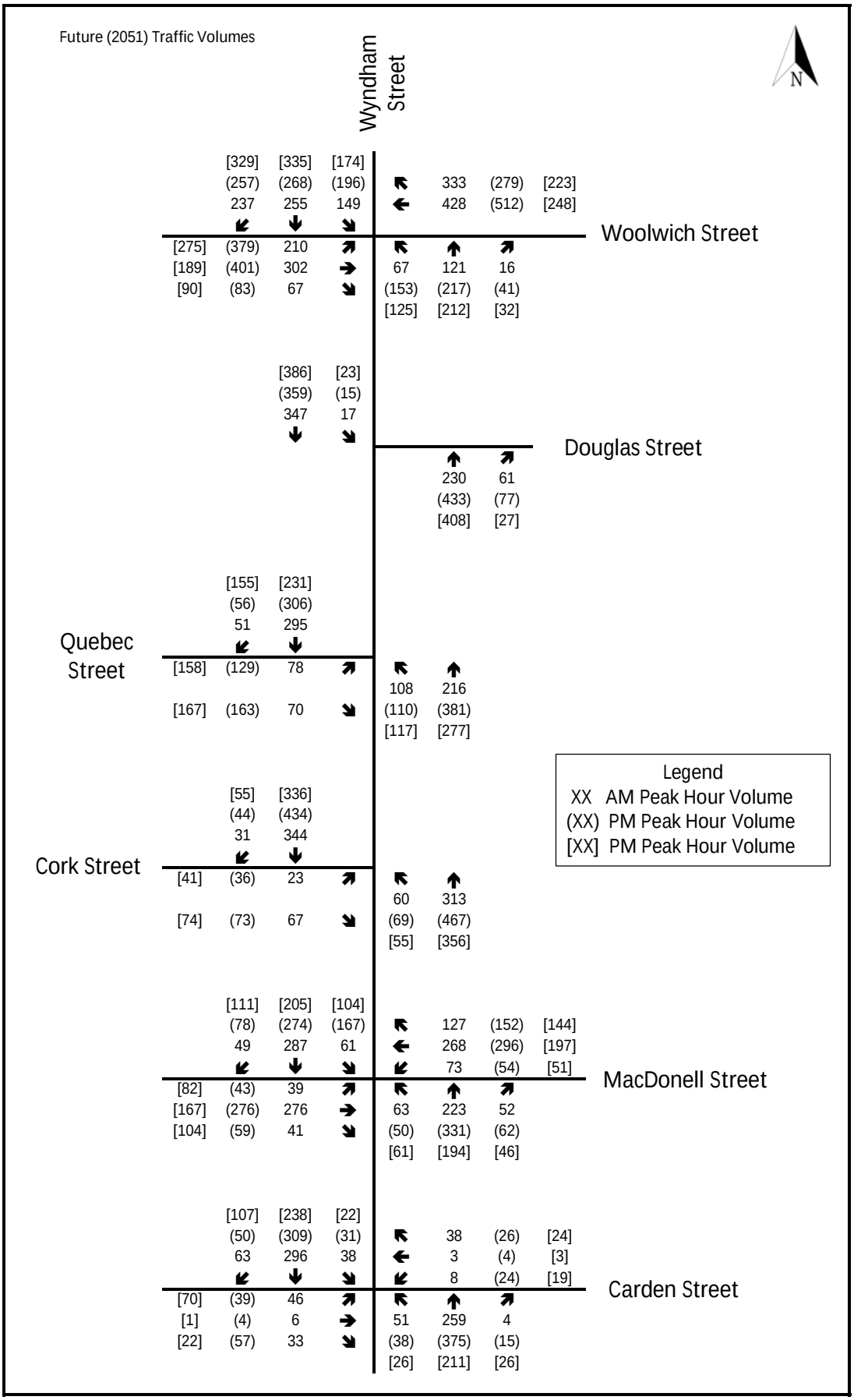
Comments

APPENDIX B

EXISTING TURNING MOVEMENT DIAGRAMS


Existing Raw Traffic Volumes
N
Wyndham Street
Woolwich Street
Douglas Street
Quebec
Cork Street
MacDonell Street
Carden Street
[239] (176) 166
[243] (144) 133
[126] (131) 103
224 (194) [162]
281 (341) [180]
[200] (263) 148
[137] (254) 203
[65] (56) 46
46 77 11
(106) (156) (27)
[91] [144] [23]
[286] (171) 143
[17] (10) 12
111 42
(93) (53)
[252] [20]
[115] (40) 37
[171] (131) 106
[117] (93) 56
77 97
[124] (114) 49
(76) (186)
[87] [155]
[41] (31) 22
[249] (279) 235
[30] (25) 16
42 212
[55] (51) 47
(48) (317)
[41] [264]
[82] (58) 36
[152] (179) 109
[77] (118) 43
88 (110) [107]
186 (215) [146]
50 (39) [38]
[61] (32) 29
[124] (147) 128
[77] (44) 30
47 127 36
(37) (198) (44)
[45] [144] [34]
[79] (36) 45
[176] (215) 120
[16] (22) 27
27 (19) [18]
2 (3) [2]
6 (17) [14]
[52] (28) 33
[1] (3) 4
[16] (41) 24
37 181 3
(27) (246) (11)
[19] [156] [19]
Legend
XX AM Peak Hour Volume
(XX) PM Peak Hour Volume
[XX] PM Peak Hour Volume


Existing Adjusted Traffic Volumes
Wyndham Street
N
[244] (181) 171
[248] (198) 187
[129] (135) 106
231 289
(200) (351)
[165] [184]
Woolwich Street
[204] [140] [66]
(271) (262) (58)
152 209 47
47 (109) [93]
89 (161) [157]
11 (28) [23]
[286] (261) 252
[17] (11) 13
Douglas Street
167 (315) [302]
45 (57) [20]
[115] (41) 38
[171] (220) 214
Quebec Street
[117] [124]
(96) (117)
58 50
79 (78) [87]
155 (277) [205]
[41] (33) 23
[249] (311) 249
Cork Street
[30] [55]
(27) (54)
17 50
45 (51) [41]
225 (336) [264]
Legend
XX AM Peak Hour Volume
(XX) PM Peak Hour Volume
[XX] PM Peak Hour Volume
[82] (58) 36
[152] (196) 209
[77] (118) 43
88 186 50
(110) (215) (39)
[107] [146] [38]
MacDonell Street
[61] [124] [77]
(32) (197) (44)
29 198 30
47 (37) [45]
162 (238) [144]
36 (44) [34]
[79] (37) 46
[176] (221) 212
[16] (23) 28
28 2 6
(20) (3) (18)
[18] [2] [14]
Carden Street
[52] [1] [16]
(29) (3) (42)
34 4 25
38 (28) [19]
186 (268) [156]
3 (11) [19]


Future (2051) Traffic Volumes
Wyndham Street
N
Woolwich Street
Douglas Street
Quebec Street
Cork Street
MacDonell Street
Carden Street
Legend
XX AM Peak Hour Volume
(XX) PM Peak Hour Volume
[XX] PM Peak Hour Volume

APPENDIX C

SIGNAL TIMING PLANS

CITY OF GUELPH

Traffic Signal Timing Parameters

Database Date	From field		Prepared Date:	Oct. 11, 2019
Database Rev	From field		Completed By:	I.T.
Timing Card / Field rev	From field		Checked By:	
Location	Woolwich @ Wyndham/Eramosa			

Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.) WALK	Pedestrian Minimum (sec.) FDWALK	Amber (sec.)	All Red (sec.)	TIME PERIOD (sec.) (Green+Amber+All Red) All day MAX			
1	SBLT - Eramosa Prot. & WBRT Woolwich P+P	6.0			3.0		19.0			
2	NB Wyndham	10.0	7.0	15.0	4.0	2.0	22.0			
3	EBLT - Woolwich P+P	6.0			3.0		11.0			
4	WB Woolwich	10.0	10.0	19.0	4.0	2.0	19.0			
5	NBLT Wyndham P+P	6.0			3.0		7.0			
6	SB Eramosa	10.0	7.0	15.0	4.0	2.0	34.0			
7	not in use				3.0					
8	EB Woolwich	10.0	10.0	19.0	4.0	2.0	19.0			

System Control	No
Local Control	Yes
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)	
7:00 - 21:00	All day	Free		

Note: P+P = Protected Permissive Phase
Prot. = Fully Protected Phase

CITY OF GUELPH

Traffic Signal Timing Parameters

Database Date	Friday, March 26, 2021		Prepared Date:	I.T.
Database Rev	Field		Completed By:	I.T.
Timing Card / Field rev	Field		Checked By:	

Location:	Wyndham @ MacDonell							
							TIME PERIOD (sec.) (Green+Amber+All Red)	
Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.)		Amber (sec.)	All Red (sec.)	Day PEAK	Night PEAK
			WALK	FDWALK				
1	SBLT - P+P	6.0			3.0		9.0	0.0
2	NB - Wyndham	10.0	7.0	13.0	4.0	2.0	31.0	38.0
3	Not in use							
4	WB - MacDonell	10.0	10.0	13.0	4.0	2.0	30.0	27.0
5	Not in use							
6	SB - Wyndham	10.0	7.0	13.0	4.0	2.0	40.0	38.0
7	Not in use							
8	EB - MacDonell	10.0	10.0	13.0	4.0	2.0	30.0	27.0

System Control	Yes
Local Control	No
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)
7:00 - 00:00	Day	70	5
00:00 - 00:30	Night	65	42

Note: P+P = Protected Permissive Phase
Prot. = Fully Protected Phase

CITY OF GUELPH

Traffic Signal Timing Parameters

Database Date	Friday, March 26, 2021		Prepared Date:	I.T.
Database Rev	Field		Completed By:	I.T.
Timing Card / Field rev	Field		Checked By:	

Location:	Wyndham @ Carden						TIME PERIOD (sec.) (Green+Amber+All Red)		
Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.)		Amber (sec.)	All Red (sec.)	Day PEAK	Night PEAK	
			WALK	FDWALK					
1	SBLT - P+P	6.0			3.0		9.0	0.0	
2	NB - Wyndham	10.0	13.0	12.0	4.0	2.0	31.0	38.0	
3	Not in use								
4	WB - MacDonell	10.0	11.0	9.0	4.0	2.0	30.0	27.0	
5	Not in use								
6	SB - Wyndham	10.0	13.0	12.0	4.0	2.0	40.0	38.0	
7	Not in use								
8	EB - MacDonell	10.0	11.0	9.0	4.0	2.0	30.0	27.0	

System Control	Yes
Local Control	No
Semi-Actuated Mode	Yes

TIME (M-F)	PEAK	CYCLE LENGTH (sec.)	OFFSET (sec.)
7:00 - 00:00	Day	70	5
00:00 - 00:30	Night	65	42

Note: P+P = Protected Permissive Phase

Prot. = Fully Protected Phase

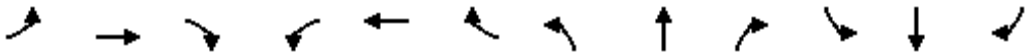
APPENDIX D

SYNCHRO HCM REPORTS

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	165	227	51	314	251	51	109	115	389
Act Effct Green (s)	27.2	24.1	24.1	13.3	15.6	13.8	10.2	15.6	20.6
Actuated g/C Ratio	0.45	0.40	0.40	0.22	0.26	0.23	0.17	0.26	0.34
v/c Ratio	0.49	0.38	0.08	0.89	0.79	0.23	0.22	0.28	0.36
Control Delay	18.0	17.3	0.3	56.7	43.9	13.3	23.3	22.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	17.3	0.3	56.7	43.9	13.3	23.3	22.3	9.0
LOS	B	B	A	E	D	B	C	C	A
Approach Delay		15.6		51.0			20.1		12.0
Approach LOS		B		D			C		B
Queue Length 50th (m)	13.3	20.8	0.0	39.9	30.1	3.2	5.7	11.8	9.4
Queue Length 95th (m)	25.8	38.1	0.0	#85.9	#67.2	8.1	12.3	24.5	19.0
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	344	610	619	352	335	220	787	429	1460
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.37	0.08	0.89	0.75	0.23	0.14	0.27	0.27

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 60.9			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 26.9		Intersection LOS: C	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	209	47	0	289	231	47	89	11	106	187	171
Future Volume (vph)	152	209	47	0	289	231	47	89	11	106	187	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1449	1513	1333		1613	1246	1404	2901		1593	2880	
Flt Permitted	0.32	1.00	1.00		1.00	1.00	0.53	1.00		0.95	1.00	
Satd. Flow (perm)	481	1513	1333		1613	1246	788	2901		1593	2880	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	227	51	0	314	251	51	97	12	115	203	186
RTOR Reduction (vph)	0	0	31	0	0	0	0	11	0	0	124	0
Lane Group Flow (vph)	165	227	20	0	314	251	51	98	0	115	265	0
Confl. Peds. (#/hr)	13		25	25		13	25		60	60		25
Heavy Vehicles (%)	12%	13%	6%	2%	6%	5%	15%	10%	0%	2%	5%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	24.1	24.1	24.1		13.4	15.6	9.7	7.5		15.6	20.9	
Effective Green, g (s)	24.1	24.1	24.1		13.4	15.6	9.7	7.5		15.6	20.9	
Actuated g/C Ratio	0.39	0.39	0.39		0.22	0.25	0.16	0.12		0.25	0.34	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	306	586	516		347	312	144	349		399	967	
v/s Ratio Prot	c0.07	0.15			c0.19	c0.20	0.01	0.03		0.07	c0.09	
v/s Ratio Perm	0.14		0.01				0.04					
v/c Ratio	0.54	0.39	0.04		0.90	0.80	0.35	0.28		0.29	0.27	
Uniform Delay, d1	13.7	13.7	11.8		23.8	21.9	23.0	24.9		18.8	15.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.8	0.4	0.0		25.8	13.9	1.5	0.4		0.4	0.2	
Delay (s)	15.5	14.2	11.9		49.6	35.8	24.5	25.3		19.2	15.3	
Level of Service	B	B	B		D	D	C	C		B	B	
Approach Delay (s)		14.4			43.5			25.1			16.2	
Approach LOS		B			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

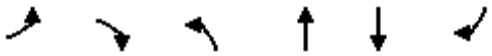
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	167	45	13	252
Future Volume (Veh/h)	0	0	167	45	13	252
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	182	49	14	274
Pedestrians	89					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked						
vC, conflicting volume	460	204			320	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	460	204			320	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	524	802			1251	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	121	110	105	183
Volume Left	0	0	14	0
Volume Right	0	49	0	0
cSH	1700	1700	1251	1700
Volume to Capacity	0.07	0.06	0.01	0.11
Queue Length 95th (m)	0.0	0.0	0.3	0.0
Control Delay (s)	0.0	0.0	1.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.4	
Approach LOS				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	63	54	254	274
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.13	0.14	0.27	0.25
Control Delay	16.8	6.2	11.6	14.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	6.2	11.6	14.7
LOS	B	A	B	B
Approach Delay	11.9		11.6	14.7
Approach LOS	B		B	B
Queue Length 50th (m)	5.9	0.0	10.2	12.0
Queue Length 95th (m)	13.9	7.0	17.6	20.5
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	478	379	940	1075
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.14	0.27	0.25

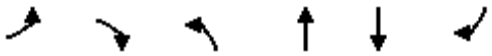
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.27	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	50	79	155	214	38
Future Volume (vph)	58	50	79	155	214	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.99	
Flpb, ped/bikes	0.94	1.00		0.98	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	0.95	1.00		0.98	1.00	
Satd. Flow (prot)	1396	1003		2660	2954	
Flt Permitted	0.95	1.00		0.72	1.00	
Satd. Flow (perm)	1396	1003		1936	2954	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	54	86	168	233	41
RTOR Reduction (vph)	0	35	0	0	21	0
Lane Group Flow (vph)	63	19	0	254	253	0
Confl. Peds. (#/hr)	72	52	57			57
Heavy Vehicles (%)	9%	23%	17%	10%	7%	0%
Parking (#/hr)		0		0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	478	343		940	1055	
v/s Ratio Prot					0.09	
v/s Ratio Perm	c0.05	0.02		c0.13		
v/c Ratio	0.13	0.05		0.27	0.24	
Uniform Delay, d1	15.8	15.4		10.7	15.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3		0.7	0.5	
Delay (s)	16.4	15.7		11.4	16.4	
Level of Service	B	B		B	B	
Approach Delay (s)	16.1			11.4	16.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	50	45	225	249	23
Future Volume (Veh/h)	17	50	45	225	249	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	54	49	245	271	25
Pedestrians	11			35	49	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			3	4	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	564	194	307			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	472	88	205			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	94	96			
cM capacity (veh/h)	464	883	1316			

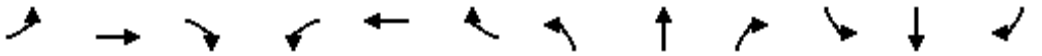
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	131	163	181	115
Volume Left	18	49	0	0	0
Volume Right	54	0	0	0	25
cSH	720	1316	1700	1700	1700
Volume to Capacity	0.10	0.04	0.10	0.11	0.07
Queue Length 95th (m)	2.7	0.9	0.0	0.0	0.0
Control Delay (s)	10.6	3.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.6	1.4		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	171	33	311	96	266	47	266
Act Effct Green (s)	18.6	18.6	18.6	18.6	25.2	6.0	34.2
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.39	0.09	0.53
v/c Ratio	0.48	0.10	0.79	0.25	0.30	0.40	0.38
Control Delay	23.6	0.6	36.1	6.1	14.3	40.4	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	23.6	0.6	36.1	6.1	15.0	40.4	11.6
LOS	C	A	D	A	B	D	B
Approach Delay	19.9		29.1		15.0		15.9
Approach LOS	B		C		B		B
Queue Length 50th (m)	17.7	0.0	35.7	0.2	10.5	5.8	17.4
Queue Length 95th (m)	34.2	0.0	62.9	9.5	21.1	#17.8	38.1
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	462	416	513	474	879	118	701
Starvation Cap Reductn	0	0	0	0	342	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.08	0.61	0.20	0.50	0.40	0.38

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 64.9	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 88.3%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

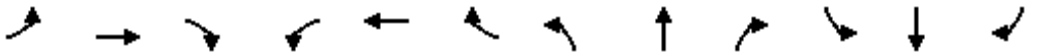


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	128	30	50	236	88	47	162	36	43	209	36
Future Volume (vph)	29	128	30	50	236	88	47	162	36	43	209	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.96		1.00	0.94		0.97		1.00	0.98	
Flpb, ped/bikes		0.99	1.00		1.00	1.00		0.98		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.98	
Flt Protected		0.99	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1386	963		1502	1120		2594		1269	1318	
Flt Permitted		0.89	1.00		0.91	1.00		0.85		0.95	1.00	
Satd. Flow (perm)		1242	963		1379	1120		2229		1269	1318	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	139	33	54	257	96	51	176	39	47	227	39
RTOR Reduction (vph)	0	0	24	0	0	67	0	19	0	0	8	0
Lane Group Flow (vph)	0	171	9	0	311	29	0	247	0	47	258	0
Confl. Peds. (#/hr)	56		38	38		56	76		107	107		76
Heavy Vehicles (%)	24%	21%	30%	14%	12%	10%	36%	10%	17%	28%	12%	11%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		18.6	18.6		18.6	18.6		25.2		6.0	34.2	
Effective Green, g (s)		18.6	18.6		18.6	18.6		25.2		6.0	34.2	
Actuated g/C Ratio		0.29	0.29		0.29	0.29		0.39		0.09	0.53	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		356	276		395	321		866		117	695	
v/s Ratio Prot										0.04		
v/s Ratio Perm		0.14	0.01		c0.23	0.03		0.11			c0.20	
v/c Ratio		0.48	0.03		0.79	0.09		0.29		0.40	0.37	
Uniform Delay, d1		19.1	16.6		21.3	16.9		13.6		27.7	9.0	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.1		10.0	0.1		0.2		2.3	1.5	
Delay (s)		20.1	16.7		31.2	17.0		13.8		30.0	10.5	
Level of Service		C	B		C	B		B		C	B	
Approach Delay (s)		19.6			27.9			13.8			13.4	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	9	30	41	205	30	280
Act Effct Green (s)	10.2	10.2	10.2	39.0	39.0	43.1	42.5
Actuated g/C Ratio	0.18	0.18	0.18	0.70	0.70	0.77	0.76
v/c Ratio	0.31	0.05	0.09	0.06	0.18	0.06	0.22
Control Delay	17.9	19.6	0.5	8.4	7.9	3.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	17.9	19.6	0.5	8.4	7.9	3.7	5.0
LOS	B	B	A	A	A	A	A
Approach Delay	17.9	4.9			8.0		4.9
Approach LOS	B	A			A		A
Queue Length 50th (m)	3.8	0.8	0.0	1.5	8.3	0.9	10.9
Queue Length 95th (m)	13.2	4.0	0.0	7.4	25.9	3.2	22.0
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	482	464	648	682	1156	514	1259
Starvation Cap Reductn	0	0	0	0	0	0	588
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.02	0.05	0.06	0.18	0.06	0.42

Intersection Summary			
Cycle Length: 70			
Actuated Cycle Length: 55.8			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			



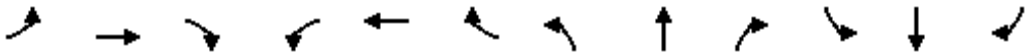
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	4	25	6	2	28	38	186	3	28	212	46
Future Volume (vph)	34	4	25	6	2	28	38	186	3	28	212	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.94			1.00	0.96	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.98			0.91	1.00	0.98	1.00		0.97	1.00	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1296			1448	1391	1585	1656		1019	1648	
Flt Permitted		0.83			0.73	1.00	0.59	1.00		0.58	1.00	
Satd. Flow (perm)		1099			1096	1391	980	1656		624	1648	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	4	27	7	2	30	41	202	3	30	230	50
RTOR Reduction (vph)	0	24	0	0	0	27	0	0	0	0	7	0
Lane Group Flow (vph)	0	44	0	0	9	3	41	205	0	30	273	0
Confl. Peds. (#/hr)	35		81	81		35	30		59	59		30
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%	0%	3%	0%	55%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		6.2			6.2	6.2	36.5	36.5		41.9	41.9	
Effective Green, g (s)		6.2			6.2	6.2	36.5	36.5		41.9	41.9	
Actuated g/C Ratio		0.10			0.10	0.10	0.61	0.61		0.70	0.70	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		113			113	143	595	1005		450	1148	
v/s Ratio Prot										0.00	c0.17	
v/s Ratio Perm		c0.04			0.01	0.00	0.04	0.12		0.04		
v/c Ratio		0.39			0.08	0.02	0.07	0.20		0.07	0.24	
Uniform Delay, d1		25.2			24.4	24.2	4.8	5.3		2.9	3.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.2			0.3	0.1	0.2	0.5		0.1	0.5	
Delay (s)		27.4			24.7	24.3	5.1	5.7		3.0	3.8	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		27.4			24.4			5.6			3.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	295	285	63	382	217	118	205	147	412
Act Effct Green (s)	43.0	40.0	40.0	29.0	16.0	18.3	11.3	16.0	24.7
Actuated g/C Ratio	0.52	0.49	0.49	0.35	0.19	0.22	0.14	0.19	0.30
v/c Ratio	0.76	0.37	0.09	0.65	0.90	0.58	0.49	0.48	0.41
Control Delay	27.9	15.3	0.2	28.8	72.0	32.9	32.8	35.9	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	15.3	0.2	28.8	72.0	32.9	32.8	35.9	13.4
LOS	C	B	A	C	E	C	C	D	B
Approach Delay		19.6		44.5			32.8		19.3
Approach LOS		B		D			C		B
Queue Length 50th (m)	26.1	27.3	0.0	50.9	34.6	12.3	14.5	21.4	14.4
Queue Length 95th (m)	#60.4	49.9	0.0	87.1	#79.6	23.5	25.2	41.6	26.8
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	390	769	722	590	242	203	588	306	1107
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.37	0.09	0.65	0.90	0.58	0.35	0.48	0.37

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 82.3			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	262	58	0	351	200	109	161	28	135	198	181
Future Volume (vph)	271	262	58	0	351	200	109	161	28	135	198	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95		1.00	1.00	1.00	0.99		1.00	0.95	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1558	1583	1331		1676	1246	1443	2918		1577	2834	
Flt Permitted	0.34	1.00	1.00		1.00	1.00	0.51	1.00		0.95	1.00	
Satd. Flow (perm)	562	1583	1331		1676	1246	775	2918		1577	2834	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	285	63	0	382	217	118	175	30	147	215	197
RTOR Reduction (vph)	0	0	33	0	0	0	0	21	0	0	138	0
Lane Group Flow (vph)	295	285	30	0	382	217	118	184	0	147	274	0
Confl. Peds. (#/hr)	23		42	42		23	75		40	40		75
Heavy Vehicles (%)	4%	8%	4%	2%	2%	5%	10%	8%	4%	3%	3%	0%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	40.0	40.0	40.0		29.0	16.0	15.1	11.9		16.0	24.7	
Effective Green, g (s)	40.0	40.0	40.0		29.0	16.0	15.1	11.9		16.0	24.7	
Actuated g/C Ratio	0.48	0.48	0.48		0.35	0.19	0.18	0.14		0.19	0.30	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	367	763	642		586	240	166	418		304	844	
v/s Ratio Prot	c0.08	0.18			0.23	c0.17	0.03	0.06		0.09	0.10	
v/s Ratio Perm	c0.31		0.02				c0.10					
v/c Ratio	0.80	0.37	0.05		0.65	0.90	0.71	0.44		0.48	0.32	
Uniform Delay, d1	16.8	13.5	11.4		22.7	32.7	30.7	32.4		29.8	22.6	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.0	0.3	0.0		5.6	37.7	13.4	0.7		5.4	0.2	
Delay (s)	28.9	13.8	11.4		28.3	70.4	44.1	33.2		35.2	22.8	
Level of Service	C	B	B		C	E	D	C		D	C	
Approach Delay (s)		20.5			43.5			37.2			26.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

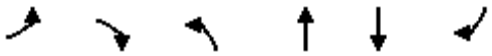
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	315	57	11	261
Future Volume (Veh/h)	0	0	315	57	11	261
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	342	62	12	284
Pedestrians	152					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	691	354			556	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	586	234			445	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			99	
cM capacity (veh/h)	417	735			1017	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	228	176	107	189
Volume Left	0	0	12	0
Volume Right	0	62	0	0
cSH	1700	1700	1017	1700
Volume to Capacity	0.13	0.10	0.01	0.11
Queue Length 95th (m)	0.0	0.0	0.3	0.0
Control Delay (s)	0.0	0.0	1.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.4	
Approach LOS				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	104	127	386	284
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.22	0.32	0.39	0.27
Control Delay	18.0	5.9	12.9	14.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	5.9	12.9	14.8
LOS	B	A	B	B
Approach Delay	11.4		12.9	14.8
Approach LOS	B		B	B
Queue Length 50th (m)	10.0	0.0	16.6	12.4
Queue Length 95th (m)	21.1	10.8	26.7	21.2
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	468	402	998	1052
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.32	0.39	0.27

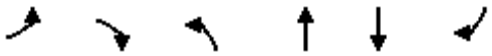
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	96	117	78	277	220	41
Future Volume (vph)	96	117	78	277	220	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.82		1.00	0.96	
Flpb, ped/bikes	0.89	1.00		0.97	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	0.95	1.00		0.99	1.00	
Satd. Flow (prot)	1366	930		2704	2884	
Flt Permitted	0.95	1.00		0.75	1.00	
Satd. Flow (perm)	1366	930		2056	2884	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	127	85	301	239	45
RTOR Reduction (vph)	0	83	0	0	23	0
Lane Group Flow (vph)	104	44	0	386	262	0
Confl. Peds. (#/hr)	124	199	157			157
Heavy Vehicles (%)	6%	15%	13%	9%	7%	0%
Parking (#/hr)			0	0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	468	318		998	1030	
v/s Ratio Prot					0.09	
v/s Ratio Perm	c0.08	0.05		c0.19		
v/c Ratio	0.22	0.14		0.39	0.25	
Uniform Delay, d1	16.4	15.9		11.4	15.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.9		1.1	0.6	
Delay (s)	17.5	16.8		12.5	16.5	
Level of Service	B	B		B	B	
Approach Delay (s)	17.1			12.5	16.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	54	51	336	311	33
Future Volume (Veh/h)	27	54	51	336	311	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	59	55	365	338	36
Pedestrians	30			116	112	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	3			10	9	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	790	333	404			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	705	230	304			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	91	95			
cM capacity (veh/h)	305	660	1191			

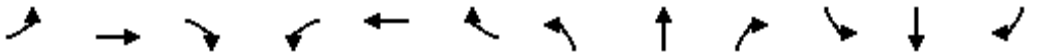
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	88	177	243	225	149
Volume Left	29	55	0	0	0
Volume Right	59	0	0	0	36
cSH	477	1191	1700	1700	1700
Volume to Capacity	0.18	0.05	0.14	0.13	0.09
Queue Length 95th (m)	5.4	1.2	0.0	0.0	0.0
Control Delay (s)	14.3	2.8	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	14.3	1.2		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	195	48	276	120	347	128	276
Act Effct Green (s)	14.9	14.9	14.9	14.9	12.9	6.1	22.1
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.26	0.12	0.45
v/c Ratio	0.48	0.14	0.64	0.31	0.56	0.73	0.48
Control Delay	18.8	1.9	22.6	7.4	19.2	53.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	1.9	22.6	7.4	19.2	53.1	12.8
LOS	B	A	C	A	B	D	B
Approach Delay	15.5		18.0		19.2		25.6
Approach LOS	B		B		B		C
Queue Length 50th (m)	13.8	0.0	20.7	1.6	12.6	11.1	13.8
Queue Length 95th (m)	33.0	2.1	46.6	11.6	28.3	#45.7	39.9
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	664	501	712	583	1198	176	893
Starvation Cap Reductn	0	0	0	0	55	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.10	0.39	0.21	0.30	0.73	0.31

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 49.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

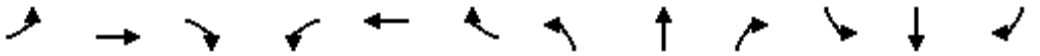


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	147	44	39	215	110	37	238	44	118	196	58
Future Volume (vph)	32	147	44	39	215	110	37	238	44	118	196	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.88		1.00	0.92		0.97		1.00	0.94	
Flpb, ped/bikes		0.99	1.00		0.99	1.00		0.98		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.97	
Flt Protected		0.99	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1483	962		1552	1109		2638		1413	1284	
Flt Permitted		0.89	1.00		0.92	1.00		0.88		0.95	1.00	
Satd. Flow (perm)		1336	962		1436	1109		2335		1413	1284	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	160	48	42	234	120	40	259	48	128	213	63
RTOR Reduction (vph)	0	0	33	0	0	65	0	21	0	0	16	0
Lane Group Flow (vph)	0	195	15	0	276	55	0	326	0	128	260	0
Confl. Peds. (#/hr)	102		169	169		102	199		194	194		199
Heavy Vehicles (%)	6%	15%	20%	8%	8%	9%	35%	11%	9%	15%	11%	2%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		14.9	14.9		14.9	14.9		13.0		6.1	22.1	
Effective Green, g (s)		14.9	14.9		14.9	14.9		13.0		6.1	22.1	
Actuated g/C Ratio		0.30	0.30		0.30	0.30		0.27		0.12	0.45	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		406	292		436	337		619		175	579	
v/s Ratio Prot										c0.09		
v/s Ratio Perm		0.15	0.02		c0.19	0.05		0.14			c0.20	
v/c Ratio		0.48	0.05		0.63	0.16		0.53		0.73	0.45	
Uniform Delay, d1		13.9	12.0		14.7	12.5		15.4		20.7	9.3	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		0.9	0.1		3.0	0.2		0.8		14.6	0.6	
Delay (s)		14.8	12.1		17.7	12.7		16.2		35.2	9.8	
Level of Service		B	B		B	B		B		D	A	
Approach Delay (s)		14.3			16.2			16.2			17.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	81	23	22	30	303	25	280
Act Effct Green (s)	10.2	10.2	10.2	40.7	40.7	43.0	42.5
Actuated g/C Ratio	0.18	0.18	0.18	0.73	0.73	0.77	0.76
v/c Ratio	0.33	0.16	0.10	0.05	0.25	0.06	0.22
Control Delay	15.2	22.3	0.9	7.1	6.9	3.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	15.2	22.3	0.9	7.1	6.9	3.7	5.1
LOS	B	C	A	A	A	A	A
Approach Delay	15.2	11.8			6.9		5.0
Approach LOS	B	B			A		A
Queue Length 50th (m)	3.2	2.1	0.0	1.1	13.1	0.7	11.1
Queue Length 95th (m)	13.4	7.6	0.0	5.9	38.6	2.8	22.2
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	515	347	396	660	1206	448	1250
Starvation Cap Reductn	0	0	0	0	0	0	581
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.07	0.06	0.05	0.25	0.06	0.42

Intersection Summary			
Cycle Length: 70			
Actuated Cycle Length: 55.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 61.4%		ICU Level of Service B	
Analysis Period (min) 15			

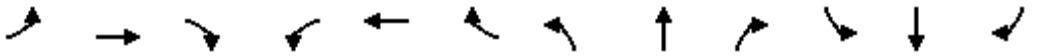


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	3	42	18	3	20	28	268	11	23	221	37
Future Volume (vph)	29	3	42	18	3	20	28	268	11	23	221	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.96			1.00	0.93	1.00	1.00		1.00	0.98	
Flpb, ped/bikes		0.98			0.96	1.00	0.91	1.00		0.98	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1306			1115	803	1483	1652		946	1639	
Flt Permitted		0.86			0.70	1.00	0.59	1.00		0.53	1.00	
Satd. Flow (perm)		1146			812	803	918	1652		531	1639	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	3	46	20	3	22	30	291	12	25	240	40
RTOR Reduction (vph)	0	41	0	0	0	20	0	1	0	0	5	0
Lane Group Flow (vph)	0	40	0	0	23	2	30	302	0	25	275	0
Confl. Peds. (#/hr)	67		35	35		67	106		57	57		106
Heavy Vehicles (%)	0%	0%	0%	47%	0%	68%	0%	2%	18%	68%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		6.1			6.1	6.1	38.2	38.2		42.4	42.4	
Effective Green, g (s)		6.1			6.1	6.1	38.2	38.2		42.4	42.4	
Actuated g/C Ratio		0.10			0.10	0.10	0.63	0.63		0.70	0.70	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		115			81	80	579	1043		380	1148	
v/s Ratio Prot										0.00	c0.17	
v/s Ratio Perm		c0.03			0.03	0.00	0.03	c0.18		0.04		
v/c Ratio		0.34			0.28	0.03	0.05	0.29		0.07	0.24	
Uniform Delay, d1		25.3			25.2	24.5	4.2	5.0		2.9	3.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8			1.9	0.1	0.2	0.7		0.1	0.5	
Delay (s)		27.1			27.1	24.7	4.4	5.7		2.9	3.7	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		27.1			25.9			5.6			3.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

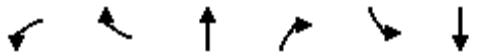
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	222	152	72	200	179	101	196	140	535
Act Effct Green (s)	25.7	22.7	22.7	11.8	12.8	17.4	10.4	12.8	20.7
Actuated g/C Ratio	0.42	0.37	0.37	0.19	0.21	0.29	0.17	0.21	0.34
v/c Ratio	0.49	0.24	0.12	0.60	0.66	0.37	0.36	0.41	0.46
Control Delay	16.9	15.3	0.9	32.0	34.9	15.3	23.1	25.0	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	15.3	0.9	32.0	34.9	15.3	23.1	25.0	9.4
LOS	B	B	A	C	C	B	C	C	A
Approach Delay		13.8		33.4			20.4		12.6
Approach LOS		B		C			C		B
Queue Length 50th (m)	17.1	12.2	0.0	22.1	19.8	6.4	10.1	14.6	12.7
Queue Length 95th (m)	34.8	26.2	1.7	#44.0	39.9	13.8	19.5	30.0	24.5
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	457	678	641	367	342	275	847	429	1498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.22	0.11	0.54	0.52	0.37	0.23	0.33	0.36

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 60.9			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 18.6		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	140	66	0	184	165	93	157	23	129	248	244
Future Volume (vph)	204	140	66	0	184	165	93	157	23	129	248	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1618	1710	1412		1710	1295	1615	3147		1624	2935	
Flt Permitted	0.49	1.00	1.00		1.00	1.00	0.45	1.00		0.95	1.00	
Satd. Flow (perm)	843	1710	1412		1710	1295	770	3147		1624	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	222	152	72	0	200	179	101	171	25	140	270	265
RTOR Reduction (vph)	0	0	45	0	0	0	0	17	0	0	176	0
Lane Group Flow (vph)	222	152	27	0	200	179	101	179	0	140	359	0
Confl. Peds. (#/hr)	18		27	27		18	33		29	29		33
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	0%	4%	0%	0%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	22.7	22.7	22.7		11.8	12.8	14.1	11.0		12.8	20.7	
Effective Green, g (s)	22.7	22.7	22.7		11.8	12.8	14.1	11.0		12.8	20.7	
Actuated g/C Ratio	0.37	0.37	0.37		0.19	0.21	0.23	0.18		0.21	0.34	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	410	631	521		328	269	219	562		338	987	
v/s Ratio Prot	c0.07	0.09			0.12	c0.14	0.02	0.06		0.09	0.12	
v/s Ratio Perm	c0.13		0.02				c0.08					
v/c Ratio	0.54	0.24	0.05		0.61	0.67	0.46	0.32		0.41	0.36	
Uniform Delay, d1	14.3	13.4	12.5		22.7	22.4	19.5	22.0		21.1	15.4	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.2	0.0		3.2	6.1	1.5	0.3		0.8	0.2	
Delay (s)	15.8	13.6	12.5		25.9	28.5	21.0	22.3		21.9	15.7	
Level of Service	B	B	B		C	C	C	C		C	B	
Approach Delay (s)		14.5			27.1			21.9			17.0	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



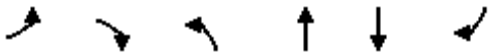
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	302	20	17	286
Future Volume (Veh/h)	0	0	302	20	17	286
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	328	22	18	311
Pedestrians	187					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	718	362			537	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	689	329			506	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	369	659			1056	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	219	131	122	207
Volume Left	0	0	18	0
Volume Right	0	22	0	0
cSH	1700	1700	1056	1700
Volume to Capacity	0.13	0.08	0.02	0.12
Queue Length 95th (m)	0.0	0.0	0.4	0.0
Control Delay (s)	0.0	0.0	1.4	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.5	
Approach LOS				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	127	135	318	311
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.26	0.25	0.32	0.29
Control Delay	18.5	4.8	12.0	10.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	4.8	12.0	10.3
LOS	B	A	B	B
Approach Delay	11.4		12.0	10.3
Approach LOS	B		B	B
Queue Length 50th (m)	12.4	0.0	13.2	9.1
Queue Length 95th (m)	24.9	10.7	21.6	17.8
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	484	537	1007	1056
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.25	0.32	0.29

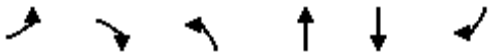
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 53.3%	ICU Level of Service A
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	117	124	87	205	171	115
Future Volume (vph)	117	124	87	205	171	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.93	
Flpb, ped/bikes	0.87	1.00		0.98	1.00	
Frt	1.00	0.85		1.00	0.94	
Flt Protected	0.95	1.00		0.99	1.00	
Satd. Flow (prot)	1413	1308		2907	2731	
Flt Permitted	0.95	1.00		0.70	1.00	
Satd. Flow (perm)	1413	1308		2074	2731	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	127	135	95	223	186	125
RTOR Reduction (vph)	0	89	0	0	80	0
Lane Group Flow (vph)	127	46	0	318	231	0
Confl. Peds. (#/hr)	149		112			112
Heavy Vehicles (%)	0%	0%	2%	2%	6%	1%
Parking (#/hr)		0		0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	484	448		1007	975	
v/s Ratio Prot					0.08	
v/s Ratio Perm	c0.09	0.04		c0.15		
v/c Ratio	0.26	0.10		0.32	0.24	
Uniform Delay, d1	16.6	15.7		10.9	15.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	0.5		0.8	0.6	
Delay (s)	17.9	16.1		11.8	16.4	
Level of Service	B	B		B	B	
Approach Delay (s)	17.0			11.8	16.4	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	55	41	264	249	41
Future Volume (Veh/h)	30	55	41	264	249	41
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	60	45	287	271	45
Pedestrians	13			96	26	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			8	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked						
vC, conflicting volume	566	267	329			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566	267	329			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	91	96			
cM capacity (veh/h)	428	671	1214			

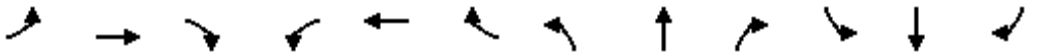
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	93	141	191	181	135
Volume Left	33	45	0	0	0
Volume Right	60	0	0	0	45
cSH	558	1214	1700	1700	1700
Volume to Capacity	0.17	0.04	0.11	0.11	0.08
Queue Length 95th (m)	4.7	0.9	0.0	0.0	0.0
Control Delay (s)	12.7	2.8	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.7	1.2		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	43.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	201	84	200	116	243	84	254
Act Effct Green (s)	14.5	14.5	14.5	14.5	25.1	6.0	34.1
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.41	0.10	0.56
v/c Ratio	0.64	0.25	0.58	0.34	0.24	0.58	0.35
Control Delay	30.7	5.9	27.4	9.2	11.7	46.2	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	30.7	5.9	27.4	9.2	12.2	46.2	8.1
LOS	C	A	C	A	B	D	A
Approach Delay	23.4		20.7		12.2		17.6
Approach LOS	C		C		B		B
Queue Length 50th (m)	21.1	0.0	20.6	2.0	7.8	9.5	10.6
Queue Length 95th (m)	40.1	7.8	38.5	12.7	17.7	#30.7	29.9
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	519	502	572	512	998	146	727
Starvation Cap Reductn	0	0	0	0	427	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.17	0.35	0.23	0.43	0.58	0.35

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 60.7	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 91.2%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

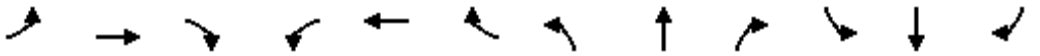


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	124	77	38	146	107	45	144	34	77	152	82
Future Volume (vph)	61	124	77	38	146	107	45	144	34	77	152	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.92		1.00	0.92		0.97		1.00	0.89	
Flpb, ped/bikes		0.98	1.00		0.99	1.00		0.96		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.95	
Flt Protected		0.98	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1587	1137		1614	1162		2778		1477	1274	
Flt Permitted		0.81	1.00		0.89	1.00		0.85		0.95	1.00	
Satd. Flow (perm)		1312	1137		1444	1162		2395		1477	1274	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	135	84	41	159	116	49	157	37	84	165	89
RTOR Reduction (vph)	0	0	64	0	0	72	0	19	0	0	24	0
Lane Group Flow (vph)	0	201	20	0	200	44	0	224	0	84	230	0
Confl. Peds. (#/hr)	94		86	86		94	196		140	140		196
Heavy Vehicles (%)	0%	6%	6%	3%	4%	3%	13%	1%	9%	10%	3%	0%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		14.5	14.5		14.5	14.5		25.1		6.0	34.1	
Effective Green, g (s)		14.5	14.5		14.5	14.5		25.1		6.0	34.1	
Actuated g/C Ratio		0.24	0.24		0.24	0.24		0.41		0.10	0.56	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		313	272		345	278		991		146	716	
v/s Ratio Prot										c0.06		
v/s Ratio Perm		c0.15	0.02		0.14	0.04		0.09			c0.18	
v/c Ratio		0.64	0.07		0.58	0.16		0.23		0.58	0.32	
Uniform Delay, d1		20.7	17.9		20.4	18.2		11.5		26.1	7.1	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		4.5	0.1		2.4	0.3		0.1		5.4	1.2	
Delay (s)		25.2	18.0		22.7	18.5		11.6		31.5	8.3	
Level of Service		C	B		C	B		B		C	A	
Approach Delay (s)		23.1			21.2			11.6			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	75	17	20	21	191	17	277
Act Effct Green (s)	10.5	10.5	10.5	40.9	40.9	43.2	42.6
Actuated g/C Ratio	0.19	0.19	0.19	0.73	0.73	0.77	0.76
v/c Ratio	0.35	0.10	0.08	0.03	0.16	0.03	0.23
Control Delay	21.3	20.6	0.6	7.4	6.5	3.9	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	21.3	20.6	0.6	7.4	6.5	3.9	4.9
LOS	C	C	A	A	A	A	A
Approach Delay	21.3	9.8			6.6		4.8
Approach LOS	C	A			A		A
Queue Length 50th (m)	5.5	1.5	0.0	0.8	7.3	0.5	9.7
Queue Length 95th (m)	15.6	6.0	0.0	4.7	24.5	2.3	21.7
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	474	398	457	702	1183	540	1208
Starvation Cap Reductn	0	0	0	0	0	0	546
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.04	0.04	0.03	0.16	0.03	0.42

Intersection Summary			
Cycle Length: 70			
Actuated Cycle Length: 56.1			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 7.7		Intersection LOS: A	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			



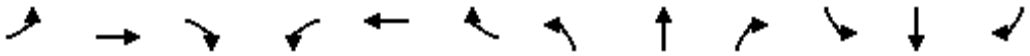
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	1	16	14	2	18	19	156	19	16	176	79
Future Volume (vph)	52	1	16	14	2	18	19	156	19	16	176	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.94	1.00	0.99		1.00	0.98	
Flpb, ped/bikes		0.96			0.97	1.00	0.96	1.00		0.98	1.00	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected		0.96			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1370			1280	950	1564	1624		1057	1582	
Flt Permitted		0.77			0.70	1.00	0.59	1.00		0.59	1.00	
Satd. Flow (perm)		1091			933	950	970	1624		658	1582	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	1	17	15	2	20	21	170	21	17	191	86
RTOR Reduction (vph)	0	15	0	0	0	18	0	4	0	0	14	0
Lane Group Flow (vph)	0	60	0	0	17	2	21	187	0	17	263	0
Confl. Peds. (#/hr)	52		21	21		52	45		48	48		45
Heavy Vehicles (%)	0%	0%	0%	28%	0%	44%	0%	2%	10%	50%	1%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		6.4			6.4	6.4	38.4	38.4		42.6	42.6	
Effective Green, g (s)		6.4			6.4	6.4	38.4	38.4		42.6	42.6	
Actuated g/C Ratio		0.10			0.10	0.10	0.63	0.63		0.70	0.70	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		114			97	99	610	1022		467	1104	
v/s Ratio Prot										0.00	c0.17	
v/s Ratio Perm		c0.05			0.02	0.00	0.02	0.12		0.02		
v/c Ratio		0.52			0.18	0.02	0.03	0.18		0.04	0.24	
Uniform Delay, d1		25.9			24.9	24.5	4.3	4.7		2.9	3.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.3			0.9	0.1	0.1	0.4		0.0	0.5	
Delay (s)		30.2			25.8	24.6	4.4	5.1		2.9	3.8	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		30.2			25.1			5.1			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	165	227	51	314	251	51	109	115	389
Act Effct Green (s)	27.0	24.0	24.0	14.7	15.6	13.8	10.2	15.6	20.5
Actuated g/C Ratio	0.44	0.40	0.40	0.24	0.26	0.23	0.17	0.26	0.34
v/c Ratio	0.50	0.38	0.08	0.80	0.79	0.23	0.22	0.28	0.36
Control Delay	18.9	17.3	0.3	42.1	43.7	13.3	23.3	22.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	17.3	0.3	42.1	43.7	13.3	23.3	22.3	9.0
LOS	B	B	A	D	D	B	C	C	A
Approach Delay		15.9		42.8			20.1		12.0
Approach LOS		B		D			C		B
Queue Length 50th (m)	13.3	20.8	0.0	38.2	30.1	3.2	5.7	11.8	9.4
Queue Length 95th (m)	25.8	38.1	0.0	#79.2	#67.2	8.1	12.3	24.5	19.0
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	327	612	621	408	336	220	790	430	1465
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.37	0.08	0.77	0.75	0.23	0.14	0.27	0.27

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 60.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



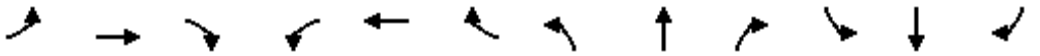
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	209	47	0	289	231	47	89	11	106	187	171
Future Volume (vph)	152	209	47	0	289	231	47	89	11	106	187	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1448	1513	1333		1613	1246	1404	2901		1593	2880	
Flt Permitted	0.35	1.00	1.00		1.00	1.00	0.53	1.00		0.95	1.00	
Satd. Flow (perm)	527	1513	1333		1613	1246	788	2901		1593	2880	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	227	51	0	314	251	51	97	12	115	203	186
RTOR Reduction (vph)	0	0	31	0	0	0	0	11	0	0	123	0
Lane Group Flow (vph)	165	227	20	0	314	251	51	98	0	115	266	0
Confl. Peds. (#/hr)	13		25	25		13	25		60	60		25
Heavy Vehicles (%)	12%	13%	6%	2%	6%	5%	15%	10%	0%	2%	5%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	24.0	24.0	24.0		14.8	15.6	9.7	7.5		15.6	20.9	
Effective Green, g (s)	24.0	24.0	24.0		14.8	15.6	9.7	7.5		15.6	20.9	
Actuated g/C Ratio	0.39	0.39	0.39		0.24	0.25	0.16	0.12		0.25	0.34	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	295	584	515		384	313	144	350		400	969	
v/s Ratio Prot	c0.06	0.15			c0.19	c0.20	0.01	0.03		0.07	c0.09	
v/s Ratio Perm	0.16		0.01				0.04					
v/c Ratio	0.56	0.39	0.04		0.82	0.80	0.35	0.28		0.29	0.27	
Uniform Delay, d1	13.7	13.8	11.9		22.4	21.8	22.9	24.8		18.8	15.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	0.4	0.0		12.7	13.7	1.5	0.4		0.4	0.2	
Delay (s)	16.0	14.2	11.9		35.0	35.5	24.4	25.3		19.2	15.2	
Level of Service	B	B	B		D	D	C	C		B	B	
Approach Delay (s)		14.6			35.3			25.0			16.1	
Approach LOS		B			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	295	285	63	382	217	118	205	147	412
Act Effct Green (s)	43.0	40.0	40.0	29.0	18.0	18.3	11.3	18.0	26.7
Actuated g/C Ratio	0.51	0.47	0.47	0.34	0.21	0.22	0.13	0.21	0.32
v/c Ratio	0.79	0.38	0.09	0.66	0.82	0.59	0.50	0.44	0.40
Control Delay	31.9	16.4	0.2	30.5	57.7	34.1	34.2	33.9	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	16.4	0.2	30.5	57.7	34.1	34.2	33.9	12.9
LOS	C	B	A	C	E	C	C	C	B
Approach Delay		21.9		40.3			34.1		18.5
Approach LOS		C		D			C		B
Queue Length 50th (m)	27.9	29.0	0.0	53.3	34.7	12.3	15.1	21.4	14.4
Queue Length 95th (m)	#65.3	51.8	0.0	89.7	#76.5	23.4	26.0	41.2	26.6
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	374	751	707	576	266	199	505	336	1097
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.38	0.09	0.66	0.82	0.59	0.41	0.44	0.38

Intersection Summary	
Cycle Length: 71	
Actuated Cycle Length: 84.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 82.6%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

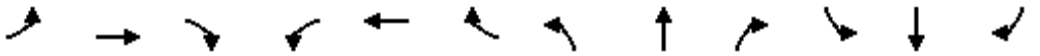


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	262	58	0	351	200	109	161	28	135	198	181
Future Volume (vph)	271	262	58	0	351	200	109	161	28	135	198	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95		1.00	1.00	1.00	0.99		1.00	0.95	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1558	1583	1330		1676	1246	1442	2917		1577	2832	
Flt Permitted	0.33	1.00	1.00		1.00	1.00	0.51	1.00		0.95	1.00	
Satd. Flow (perm)	547	1583	1330		1676	1246	775	2917		1577	2832	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	285	63	0	382	217	118	175	30	147	215	197
RTOR Reduction (vph)	0	0	33	0	0	0	0	21	0	0	135	0
Lane Group Flow (vph)	295	285	30	0	382	217	118	184	0	147	277	0
Confl. Peds. (#/hr)	23		42	42		23	75		40	40		75
Heavy Vehicles (%)	4%	8%	4%	2%	2%	5%	10%	8%	4%	3%	3%	0%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	40.0	40.0	40.0		29.0	18.0	15.1	11.9		18.0	26.7	
Effective Green, g (s)	40.0	40.0	40.0		29.0	18.0	15.1	11.9		18.0	26.7	
Actuated g/C Ratio	0.47	0.47	0.47		0.34	0.21	0.18	0.14		0.21	0.31	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	352	745	626		572	264	162	408		334	890	
v/s Ratio Prot	c0.08	0.18			0.23	c0.17	0.03	0.06		0.09	0.10	
v/s Ratio Perm	c0.32		0.02				c0.10					
v/c Ratio	0.84	0.38	0.05		0.67	0.82	0.73	0.45		0.44	0.31	
Uniform Delay, d1	18.4	14.5	12.1		23.8	31.9	31.9	33.5		29.1	22.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.8	0.3	0.0		6.1	24.2	15.1	0.8		4.2	0.2	
Delay (s)	34.2	14.8	12.2		29.9	56.1	46.9	34.3		33.2	22.3	
Level of Service	C	B	B		C	E	D	C		C	C	
Approach Delay (s)		23.5			39.4			38.9			25.2	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	222	152	72	200	179	101	196	140	535
Act Effct Green (s)	25.1	22.1	22.1	12.0	12.9	17.5	10.4	12.9	20.8
Actuated g/C Ratio	0.41	0.37	0.37	0.20	0.21	0.29	0.17	0.21	0.34
v/c Ratio	0.50	0.24	0.12	0.59	0.65	0.36	0.35	0.41	0.45
Control Delay	17.6	15.7	0.9	30.8	33.9	15.1	23.0	24.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	15.7	0.9	30.8	33.9	15.1	23.0	24.5	9.2
LOS	B	B	A	C	C	B	C	C	A
Approach Delay		14.3		32.3			20.3		12.4
Approach LOS		B		C			C		B
Queue Length 50th (m)	16.9	12.1	0.0	21.4	19.1	6.1	9.7	14.1	12.3
Queue Length 95th (m)	35.8	26.9	1.6	43.9	39.7	13.7	19.8	29.9	24.4
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	442	684	646	399	367	277	802	460	1509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.22	0.11	0.50	0.49	0.36	0.24	0.30	0.35

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 60.5			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 18.3		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	140	66	0	184	165	93	157	23	129	248	244
Future Volume (vph)	204	140	66	0	184	165	93	157	23	129	248	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1618	1710	1412		1710	1295	1616	3147		1624	2935	
Flt Permitted	0.50	1.00	1.00		1.00	1.00	0.45	1.00		0.95	1.00	
Satd. Flow (perm)	853	1710	1412		1710	1295	770	3147		1624	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	222	152	72	0	200	179	101	171	25	140	270	265
RTOR Reduction (vph)	0	0	46	0	0	0	0	17	0	0	175	0
Lane Group Flow (vph)	222	152	26	0	200	179	101	179	0	140	360	0
Confl. Peds. (#/hr)	18		27	27		18	33		29	29		33
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	0%	4%	0%	0%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	22.1	22.1	22.1		12.0	12.9	14.1	11.0		12.9	20.8	
Effective Green, g (s)	22.1	22.1	22.1		12.0	12.9	14.1	11.0		12.9	20.8	
Actuated g/C Ratio	0.36	0.36	0.36		0.20	0.21	0.23	0.18		0.21	0.34	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	398	619	511		336	273	220	567		343	1000	
v/s Ratio Prot	c0.06	0.09			0.12	c0.14	0.02	0.06		0.09	0.12	
v/s Ratio Perm	c0.14		0.02				c0.08					
v/c Ratio	0.56	0.25	0.05		0.60	0.66	0.46	0.32		0.41	0.36	
Uniform Delay, d1	14.5	13.6	12.6		22.3	22.0	19.2	21.7		20.8	15.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.7	0.2	0.0		2.8	5.6	1.5	0.3		0.8	0.2	
Delay (s)	16.2	13.8	12.7		25.1	27.6	20.8	22.0		21.5	15.3	
Level of Service	B	B	B		C	C	C	C		C	B	
Approach Delay (s)		14.8			26.3			21.6			16.6	
Approach LOS		B			C			C			B	

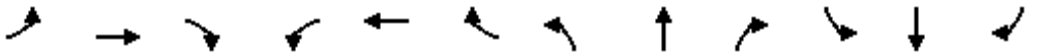
Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	228	328	73	465	362	73	149	162	535
Act Effct Green (s)	27.4	24.3	24.3	13.2	16.2	14.1	10.3	16.2	20.2
Actuated g/C Ratio	0.44	0.39	0.39	0.21	0.26	0.23	0.17	0.26	0.33
v/c Ratio	0.75	0.55	0.12	1.36	1.11	0.34	0.30	0.39	0.48
Control Delay	32.3	20.6	1.0	206.3	112.6	15.4	23.5	24.0	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.3	20.6	1.0	206.3	112.6	15.4	23.5	24.0	9.9
LOS	C	C	A	F	F	B	C	C	A
Approach Delay		22.5		165.3			20.8		13.2
Approach LOS		C		F			C		B
Queue Length 50th (m)	19.2	32.6	0.0	~82.4	~56.6	4.6	7.9	17.2	13.2
Queue Length 95th (m)	#46.7	58.2	1.7	#136.0	#105.4	10.8	15.7	33.8	25.2
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	306	593	605	342	325	214	769	417	1456
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.55	0.12	1.36	1.11	0.34	0.19	0.39	0.37

Intersection Summary	
Cycle Length: 71	
Actuated Cycle Length: 62	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 69.3	Intersection LOS: E
Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	302	67	0	428	333	67	121	16	149	255	237
Future Volume (vph)	210	302	67	0	428	333	67	121	16	149	255	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1449	1513	1333		1613	1246	1406	2899		1593	2877	
Flt Permitted	0.25	1.00	1.00		1.00	1.00	0.51	1.00		0.95	1.00	
Satd. Flow (perm)	377	1513	1333		1613	1246	759	2899		1593	2877	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	328	73	0	465	362	73	132	17	162	277	258
RTOR Reduction (vph)	0	0	45	0	0	0	0	15	0	0	172	0
Lane Group Flow (vph)	228	328	28	0	465	362	73	134	0	162	363	0
Confl. Peds. (#/hr)	13		25	25		13	25		60	60		25
Heavy Vehicles (%)	12%	13%	6%	2%	6%	5%	15%	10%	0%	2%	5%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	24.3	24.3	24.3		13.2	16.2	10.8	7.8		16.2	21.0	
Effective Green, g (s)	24.3	24.3	24.3		13.2	16.2	10.8	7.8		16.2	21.0	
Actuated g/C Ratio	0.38	0.38	0.38		0.21	0.26	0.17	0.12		0.26	0.33	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	580	511		336	318	160	357		407	954	
v/s Ratio Prot	c0.10	0.22			c0.29	c0.29	0.02	0.05		0.10	c0.13	
v/s Ratio Perm	0.21		0.02				0.06					
v/c Ratio	0.81	0.57	0.05		1.38	1.14	0.46	0.38		0.40	0.38	
Uniform Delay, d1	15.6	15.3	12.3		25.0	23.6	23.0	25.5		19.5	16.2	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.1	1.3	0.0		190.3	93.3	2.1	0.7		0.6	0.3	
Delay (s)	31.8	16.6	12.3		215.3	116.9	25.0	26.2		20.2	16.4	
Level of Service	C	B	B		F	F	C	C		C	B	
Approach Delay (s)		21.6			172.2			25.8			17.3	
Approach LOS		C			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	73.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

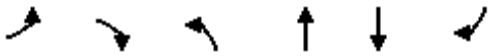
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	230	61	17	347
Future Volume (Veh/h)	0	0	230	61	17	347
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	250	66	18	377
Pedestrians	89					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked						
vC, conflicting volume	596	247			405	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	596	247			405	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	428	753			1165	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	167	149	144	251
Volume Left	0	0	18	0
Volume Right	0	66	0	0
cSH	1700	1700	1165	1700
Volume to Capacity	0.10	0.09	0.02	0.15
Queue Length 95th (m)	0.0	0.0	0.4	0.0
Control Delay (s)	0.0	0.0	1.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.4	
Approach LOS				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	85	76	352	376
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.18	0.19	0.41	0.35
Control Delay	17.4	5.9	13.5	16.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.4	5.9	13.5	16.2
LOS	B	A	B	B
Approach Delay	12.0		13.5	16.2
Approach LOS	B		B	B
Queue Length 50th (m)	8.1	0.0	15.4	17.8
Queue Length 95th (m)	17.8	8.3	25.6	28.4
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	478	393	852	1075
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.41	0.35

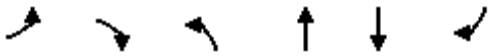
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.41	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	70	108	216	295	51
Future Volume (vph)	78	70	108	216	295	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.99	
Flpb, ped/bikes	0.94	1.00		0.99	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	0.95	1.00		0.98	1.00	
Satd. Flow (prot)	1396	1003		2668	2955	
Flt Permitted	0.95	1.00		0.65	1.00	
Satd. Flow (perm)	1396	1003		1755	2955	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	76	117	235	321	55
RTOR Reduction (vph)	0	50	0	0	20	0
Lane Group Flow (vph)	85	26	0	352	356	0
Confl. Peds. (#/hr)	72	52	57			57
Heavy Vehicles (%)	9%	23%	17%	10%	7%	0%
Parking (#/hr)		0		0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	478	343		852	1055	
v/s Ratio Prot					0.12	
v/s Ratio Perm	c0.06	0.03		c0.20		
v/c Ratio	0.18	0.08		0.41	0.34	
Uniform Delay, d1	16.1	15.5		11.6	16.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.4		1.5	0.9	
Delay (s)	16.9	15.9		13.1	17.3	
Level of Service	B	B		B	B	
Approach Delay (s)	16.5			13.1	17.3	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	67	60	313	344	31
Future Volume (Veh/h)	23	67	60	313	344	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	73	65	340	374	34
Pedestrians	11			35	49	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			3	4	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	751	250	419			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592	56	237			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	92	95			
cM capacity (veh/h)	372	897	1242			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	98	178	227	249	159
Volume Left	25	65	0	0	0
Volume Right	73	0	0	0	34
cSH	659	1242	1700	1700	1700
Volume to Capacity	0.15	0.05	0.13	0.15	0.09
Queue Length 95th (m)	4.2	1.3	0.0	0.0	0.0
Control Delay (s)	11.4	3.2	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.4	1.4		0.0	
Approach LOS	B				

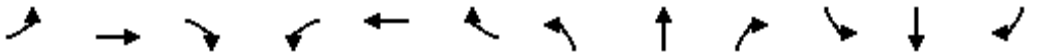
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	459	45	444	138	367	66	365
Act Effct Green (s)	24.0	24.0	24.0	24.0	25.0	6.0	34.0
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.36	0.09	0.49
v/c Ratio	1.22	0.12	1.52	0.31	0.47	0.61	0.56
Control Delay	146.6	1.4	272.6	8.8	18.1	57.3	16.3
Queue Delay	0.0	0.0	0.0	0.0	2.2	0.0	0.0
Total Delay	146.6	1.4	272.6	8.8	20.3	57.3	16.3
LOS	F	A	F	A	C	E	B
Approach Delay	133.6		210.0		20.3		22.6
Approach LOS	F		F		C		C
Queue Length 50th (m)	~79.5	0.0	~87.3	4.1	18.0	9.0	31.8
Queue Length 95th (m)	#132.9	1.6	#140.2	16.2	30.1	#26.9	57.1
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	376	390	293	444	783	108	647
Starvation Cap Reductn	0	0	0	0	280	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.12	1.52	0.31	0.73	0.61	0.56

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay: 109.7	Intersection LOS: F
Intersection Capacity Utilization 106.4%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

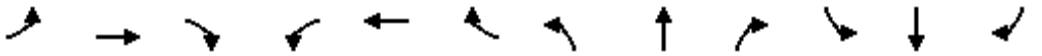


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	384	41	73	336	127	63	223	52	61	287	49
Future Volume (vph)	39	384	41	73	336	127	63	223	52	61	287	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.95		1.00	0.94		0.97		1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.99		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.98	
Flt Protected		1.00	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1401	960		1505	1115		2588		1269	1317	
Flt Permitted		0.78	1.00		0.56	1.00		0.82		0.95	1.00	
Satd. Flow (perm)		1099	960		855	1115		2131		1269	1317	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	417	45	79	365	138	68	242	57	66	312	53
RTOR Reduction (vph)	0	0	30	0	0	62	0	22	0	0	9	0
Lane Group Flow (vph)	0	459	15	0	444	76	0	345	0	66	356	0
Confl. Peds. (#/hr)	56		38	38		56	76		107	107		76
Heavy Vehicles (%)	24%	21%	30%	14%	12%	10%	36%	10%	17%	28%	12%	11%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		24.0	24.0		24.0	24.0		25.0		6.0	34.0	
Effective Green, g (s)		24.0	24.0		24.0	24.0		25.0		6.0	34.0	
Actuated g/C Ratio		0.34	0.34		0.34	0.34		0.36		0.09	0.49	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		376	329		293	382		761		108	639	
v/s Ratio Prot										c0.05		
v/s Ratio Perm		0.42	0.02		c0.52	0.07		0.16			c0.27	
v/c Ratio		1.22	0.05		1.52	0.20		0.45		0.61	0.56	
Uniform Delay, d1		23.0	15.4		23.0	16.2		17.3		30.9	12.7	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		121.1	0.1		248.8	0.3		0.4		9.8	3.5	
Delay (s)		144.1	15.4		271.8	16.5		17.7		40.7	16.2	
Level of Service		F	B		F	B		B		D	B	
Approach Delay (s)		132.6			211.2			17.7			19.9	
Approach LOS		F			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	108.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	93	12	41	55	286	41	390
Act Effct Green (s)	10.6	10.6	10.6	34.8	34.8	40.1	38.3
Actuated g/C Ratio	0.19	0.19	0.19	0.62	0.62	0.71	0.68
v/c Ratio	0.40	0.06	0.12	0.10	0.28	0.09	0.35
Control Delay	19.4	19.5	1.6	9.4	9.5	4.3	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Total Delay	19.4	19.5	1.6	9.4	9.5	4.3	7.9
LOS	B	B	A	A	A	A	A
Approach Delay	19.4	5.7			9.5		7.5
Approach LOS	B	A			A		A
Queue Length 50th (m)	5.4	1.1	0.0	2.1	12.3	1.2	16.9
Queue Length 95th (m)	16.6	4.8	1.6	9.9	38.6	4.4	35.9
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	485	469	643	546	1021	451	1126
Starvation Cap Reductn	0	0	0	0	0	0	530
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.03	0.06	0.10	0.28	0.09	0.65

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 56.4	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	6	33	8	3	38	51	259	4	38	296	63
Future Volume (vph)	46	6	33	8	3	38	51	259	4	38	296	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.95			1.00	0.96	1.00	1.00		1.00	0.99	
Flpb, ped/bikes		0.98			0.92	1.00	0.98	1.00		0.98	1.00	
Frt		0.95			1.00	0.85	1.00	1.00		1.00	0.97	
Flt Protected		0.97			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1301			1462	1392	1591	1656		1024	1649	
Flt Permitted		0.83			0.74	1.00	0.53	1.00		0.54	1.00	
Satd. Flow (perm)		1103			1120	1392	890	1656		579	1649	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	7	36	9	3	41	55	282	4	41	322	68
RTOR Reduction (vph)	0	31	0	0	0	35	0	0	0	0	7	0
Lane Group Flow (vph)	0	62	0	0	12	6	55	286	0	41	383	0
Confl. Peds. (#/hr)	35		81	81		35	30		59	59		30
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%	0%	3%	0%	55%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		8.5			8.5	8.5	33.6	33.6		39.0	39.0	
Effective Green, g (s)		8.5			8.5	8.5	33.6	33.6		39.0	39.0	
Actuated g/C Ratio		0.14			0.14	0.14	0.56	0.56		0.66	0.66	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		157			160	198	502	935		397	1080	
v/s Ratio Prot										0.00	c0.23	
v/s Ratio Perm		c0.06			0.01	0.00	0.06	0.17		0.06		
v/c Ratio		0.40			0.07	0.03	0.11	0.31		0.10	0.35	
Uniform Delay, d1		23.2			22.1	21.9	6.0	6.8		3.8	4.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.6			0.2	0.1	0.4	0.8		0.1	0.9	
Delay (s)		24.8			22.3	22.0	6.4	7.7		3.9	5.5	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		24.8			22.1			7.5			5.4	
Approach LOS		C			C			A			A	

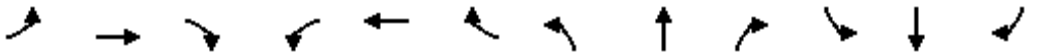
Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	412	436	90	557	303	166	281	213	570
Act Effct Green (s)	43.0	40.0	40.0	29.0	16.0	19.7	12.7	16.0	24.7
Actuated g/C Ratio	0.51	0.48	0.48	0.35	0.19	0.24	0.15	0.19	0.30
v/c Ratio	1.64	0.58	0.13	0.96	1.27	0.86	0.60	0.71	0.55
Control Delay	325.6	20.0	1.2	57.9	183.5	62.3	35.4	46.8	14.2
Queue Delay	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	325.6	22.2	1.2	57.9	183.5	62.3	35.4	46.8	14.2
LOS	F	C	A	E	F	E	D	D	B
Approach Delay		153.5		102.2			45.4		23.1
Approach LOS		F		F			D		C
Queue Length 50th (m)	~83.6	50.2	0.0	89.9	~64.9	17.9	21.0	33.7	20.1
Queue Length 95th (m)	#147.4	86.1	3.1	#164.9	#119.4	#44.4	33.6	#68.3	36.1
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	251	756	712	581	238	193	580	301	1138
Starvation Cap Reductn	0	193	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.64	0.77	0.13	0.96	1.27	0.86	0.48	0.71	0.50

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 83.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.64			
Intersection Signal Delay: 89.2		Intersection LOS: F	
Intersection Capacity Utilization 99.3%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	379	401	83	0	512	279	153	217	41	196	268	257
Future Volume (vph)	379	401	83	0	512	279	153	217	41	196	268	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.95		1.00	1.00	1.00	0.98		1.00	0.95	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1561	1583	1331		1676	1246	1453	2909		1577	2826	
Flt Permitted	0.15	1.00	1.00		1.00	1.00	0.44	1.00		0.95	1.00	
Satd. Flow (perm)	245	1583	1331		1676	1246	670	2909		1577	2826	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	436	90	0	557	303	166	236	45	213	291	279
RTOR Reduction (vph)	0	0	47	0	0	0	0	25	0	0	197	0
Lane Group Flow (vph)	412	436	43	0	557	303	166	256	0	213	373	0
Confl. Peds. (#/hr)	23		42	42		23	75		40	40		75
Heavy Vehicles (%)	4%	8%	4%	2%	2%	5%	10%	8%	4%	3%	3%	0%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	40.0	40.0	40.0		29.0	16.0	16.7	12.7		16.0	24.7	
Effective Green, g (s)	40.0	40.0	40.0		29.0	16.0	16.7	12.7		16.0	24.7	
Actuated g/C Ratio	0.48	0.48	0.48		0.35	0.19	0.20	0.15		0.19	0.30	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	242	756	636		580	238	171	441		301	833	
v/s Ratio Prot	c0.16	0.28			0.33	c0.24	0.05	0.09		0.14	0.13	
v/s Ratio Perm	c0.65		0.03				c0.15					
v/c Ratio	1.70	0.58	0.07		0.96	1.27	0.97	0.58		0.71	0.45	
Uniform Delay, d1	17.6	15.7	11.8		26.8	33.9	31.8	33.0		31.7	24.0	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	333.2	1.1	0.0		28.8	151.5	59.9	2.0		7.4	0.4	
Delay (s)	350.8	16.8	11.8		55.6	185.3	91.7	35.0		39.1	24.3	
Level of Service	F	B	B		E	F	F	C		D	C	
Approach Delay (s)		163.1			101.3			56.1			28.4	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay	94.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

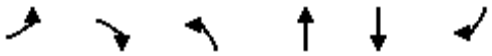
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	433	77	15	359
Future Volume (Veh/h)	0	0	433	77	15	359
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	471	84	16	390
Pedestrians	152					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	892	430			707	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	703	199			501	
tC, single (s)	6.8	6.9			4.3	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			98	
cM capacity (veh/h)	335	742			928	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	314	241	146	260
Volume Left	0	0	16	0
Volume Right	0	84	0	0
cSH	1700	1700	928	1700
Volume to Capacity	0.18	0.14	0.02	0.15
Queue Length 95th (m)	0.0	0.0	0.4	0.0
Control Delay (s)	0.0	0.0	1.1	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.4	
Approach LOS				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	140	177	534	394
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.30	0.41	0.59	0.37
Control Delay	19.1	6.2	16.4	16.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.1	6.2	16.4	16.5
LOS	B	A	B	B
Approach Delay	11.9		16.4	16.5
Approach LOS	B		B	B
Queue Length 50th (m)	13.9	0.0	26.3	18.8
Queue Length 95th (m)	27.5	12.9	42.0	29.8
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	468	435	899	1052
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.41	0.59	0.37

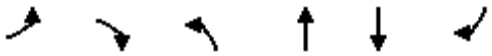
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	129	163	110	381	306	56
Future Volume (vph)	129	163	110	381	306	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	0.82		1.00	0.96	
Flpb, ped/bikes	0.89	1.00		0.98	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	0.95	1.00		0.99	1.00	
Satd. Flow (prot)	1366	930		2712	2887	
Flt Permitted	0.95	1.00		0.68	1.00	
Satd. Flow (perm)	1366	930		1852	2887	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	177	120	414	333	61
RTOR Reduction (vph)	0	116	0	0	21	0
Lane Group Flow (vph)	140	61	0	534	373	0
Confl. Peds. (#/hr)	124	199	157			157
Heavy Vehicles (%)	6%	15%	13%	9%	7%	0%
Parking (#/hr)		0		0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	468	318		899	1031	
v/s Ratio Prot					0.13	
v/s Ratio Perm	c0.10	0.07		c0.29		
v/c Ratio	0.30	0.19		0.59	0.36	
Uniform Delay, d1	16.8	16.2		13.0	16.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	1.3		2.9	1.0	
Delay (s)	18.5	17.5		15.9	17.6	
Level of Service	B	B		B	B	
Approach Delay (s)	17.9			15.9	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	73	69	467	434	44
Future Volume (Veh/h)	36	73	69	467	434	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	79	75	508	472	48
Pedestrians	30			116	112	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	3			10	9	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked	0.93	0.93	0.93			
vC, conflicting volume	1042	406	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	894	210	365			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	88	93			
cM capacity (veh/h)	218	656	1092			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	118	244	339	315	205
Volume Left	39	75	0	0	0
Volume Right	79	0	0	0	48
cSH	394	1092	1700	1700	1700
Volume to Capacity	0.30	0.07	0.20	0.19	0.12
Queue Length 95th (m)	9.9	1.8	0.0	0.0	0.0
Control Delay (s)	18.0	3.1	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	18.0	1.3		0.0	
Approach LOS	C				

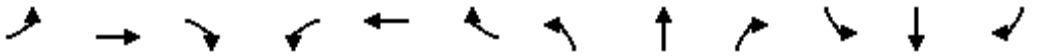
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	55.0%	ICU Level of Service	B	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	494	64	381	165	481	182	383
Act Effct Green (s)	23.1	23.1	23.1	23.1	17.6	10.7	31.2
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.27	0.16	0.47
v/c Ratio	1.08	0.17	1.16	0.38	0.79	0.80	0.63
Control Delay	90.6	3.2	125.5	11.4	31.7	56.4	17.5
Queue Delay	0.0	0.0	0.0	0.0	3.6	0.0	0.0
Total Delay	90.6	3.2	125.5	11.4	35.3	56.4	17.5
LOS	F	A	F	B	D	E	B
Approach Delay	80.6		91.0		35.3		30.0
Approach LOS	F		F		D		C
Queue Length 50th (m)	~76.7	0.0	~62.5	6.6	29.0	23.6	32.3
Queue Length 95th (m)	#136.0	4.6	#115.7	22.0	45.6	#57.5	59.8
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	459	378	329	435	726	235	678
Starvation Cap Reductn	0	0	0	0	161	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.17	1.16	0.38	0.85	0.77	0.56

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 66.4	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 59.8	Intersection LOS: E
Intersection Capacity Utilization 107.0%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	411	59	54	296	152	50	331	62	167	274	78
Future Volume (vph)	43	411	59	54	296	152	50	331	62	167	274	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.84		1.00	0.90		0.95		1.00	0.92	
Flpb, ped/bikes		1.00	1.00		0.99	1.00		0.98		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.97	
Flt Protected		1.00	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1485	921		1557	1082		2601		1413	1261	
Flt Permitted		0.89	1.00		0.60	1.00		0.86		0.95	1.00	
Satd. Flow (perm)		1321	921		949	1082		2240		1413	1261	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	447	64	59	322	165	54	360	67	182	298	85
RTOR Reduction (vph)	0	0	42	0	0	61	0	19	0	0	15	0
Lane Group Flow (vph)	0	494	22	0	381	104	0	462	0	182	368	0
Confl. Peds. (#/hr)	102		169	169		102	199		194	194		199
Heavy Vehicles (%)	6%	15%	20%	8%	8%	9%	35%	11%	9%	15%	11%	2%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		23.1	23.1		23.1	23.1		17.5		10.7	31.2	
Effective Green, g (s)		23.1	23.1		23.1	23.1		17.5		10.7	31.2	
Actuated g/C Ratio		0.35	0.35		0.35	0.35		0.26		0.16	0.47	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		460	320		330	376		591		228	593	
v/s Ratio Prot										c0.13		
v/s Ratio Perm		0.37	0.02		c0.40	0.10		c0.21			0.29	
v/c Ratio		1.07	0.07		1.15	0.28		0.78		0.80	0.62	
Uniform Delay, d1		21.6	14.4		21.6	15.6		22.6		26.8	13.1	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		63.2	0.1		98.4	0.4		6.7		17.4	1.9	
Delay (s)		84.8	14.5		120.0	16.0		29.3		44.2	15.1	
Level of Service		F	B		F	B		C		D	B	
Approach Delay (s)		76.7			88.5			29.3			24.4	
Approach LOS		E			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	30	28	41	424	34	390
Act Effct Green (s)	10.5	10.5	10.5	34.8	34.8	40.1	38.3
Actuated g/C Ratio	0.19	0.19	0.19	0.62	0.62	0.71	0.68
v/c Ratio	0.41	0.18	0.12	0.08	0.42	0.09	0.35
Control Delay	15.9	22.1	1.2	9.2	10.9	4.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Total Delay	15.9	22.1	1.2	9.2	10.9	4.4	8.0
LOS	B	C	A	A	B	A	A
Approach Delay	15.9	12.0			10.7		7.7
Approach LOS	B	B			B		A
Queue Length 50th (m)	4.3	2.8	0.0	1.5	20.2	1.0	17.3
Queue Length 95th (m)	16.2	9.0	0.0	8.0	60.6	3.8	35.9
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	519	391	392	512	1019	367	1118
Starvation Cap Reductn	0	0	0	0	0	0	524
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.08	0.07	0.08	0.42	0.09	0.66

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 56.3	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 68.0%	ICU Level of Service C
Analysis Period (min) 15	

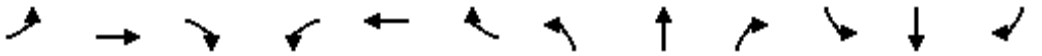
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	4	57	24	4	26	38	375	15	31	309	50
Future Volume (vph)	39	4	57	24	4	26	38	375	15	31	309	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.96			1.00	0.93	1.00	1.00		1.00	0.98	
Flpb, ped/bikes		0.98			0.96	1.00	0.93	1.00		0.99	1.00	
Frt		0.92			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.98			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1306			1120	804	1505	1653		953	1641	
Flt Permitted		0.86			0.79	1.00	0.53	1.00		0.44	1.00	
Satd. Flow (perm)		1145			924	804	842	1653		446	1641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	4	62	26	4	28	41	408	16	34	336	54
RTOR Reduction (vph)	0	53	0	0	0	24	0	1	0	0	6	0
Lane Group Flow (vph)	0	55	0	0	30	4	41	423	0	34	384	0
Confl. Peds. (#/hr)	67		35	35		67	106		57	57		106
Heavy Vehicles (%)	0%	0%	0%	47%	0%	68%	0%	2%	18%	68%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		8.5			8.5	8.5	33.5	33.5		38.9	38.9	
Effective Green, g (s)		8.5			8.5	8.5	33.5	33.5		38.9	38.9	
Actuated g/C Ratio		0.14			0.14	0.14	0.56	0.56		0.65	0.65	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		163			132	115	474	932		312	1074	
v/s Ratio Prot										0.00	c0.23	
v/s Ratio Perm		c0.05			0.03	0.00	0.05	c0.26		0.07		
v/c Ratio		0.34			0.23	0.03	0.09	0.45		0.11	0.36	
Uniform Delay, d1		22.9			22.5	21.9	5.9	7.6		3.9	4.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2			0.9	0.1	0.4	1.6		0.2	0.9	
Delay (s)		24.1			23.4	22.0	6.3	9.2		4.0	5.6	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		24.1			22.8			8.9			5.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	299	205	98	270	242	136	265	189	722
Act Effct Green (s)	26.7	23.6	23.6	12.6	15.1	18.1	11.1	15.1	23.7
Actuated g/C Ratio	0.41	0.36	0.36	0.19	0.23	0.28	0.17	0.23	0.37
v/c Ratio	0.80	0.33	0.16	0.81	0.80	0.57	0.48	0.50	0.56
Control Delay	34.9	17.4	2.2	47.4	46.7	22.6	25.6	27.3	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	17.4	2.2	47.4	46.7	22.6	25.6	27.3	10.0
LOS	C	B	A	D	D	C	C	C	B
Approach Delay		23.6		47.0			24.6		13.6
Approach LOS		C		D			C		B
Queue Length 50th (m)	26.4	18.3	0.0	33.0	28.7	8.9	15.1	20.6	18.0
Queue Length 95th (m)	#68.5	36.3	5.0	#74.0	#67.1	17.6	25.6	41.1	33.3
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	372	634	608	343	320	239	792	401	1470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.32	0.16	0.79	0.76	0.57	0.33	0.47	0.49

Intersection Summary			
Cycle Length: 71			
Actuated Cycle Length: 64.9			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.0		Intersection LOS: C	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	189	90	0	248	223	125	212	32	174	335	329
Future Volume (vph)	275	189	90	0	248	223	125	212	32	174	335	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.97		1.00	1.00	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1621	1710	1410		1710	1295	1618	3142		1624	2932	
Flt Permitted	0.35	1.00	1.00		1.00	1.00	0.38	1.00		0.95	1.00	
Satd. Flow (perm)	602	1710	1410		1710	1295	643	3142		1624	2932	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	205	98	0	270	242	136	230	35	189	364	358
RTOR Reduction (vph)	0	0	63	0	0	0	0	18	0	0	228	0
Lane Group Flow (vph)	299	205	35	0	270	242	136	247	0	189	494	0
Confl. Peds. (#/hr)	18		27	27		18	33		29	29		33
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	0%	4%	0%	0%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	23.6	23.6	23.6		12.6	15.1	14.8	11.7		15.1	23.7	
Effective Green, g (s)	23.6	23.6	23.6		12.6	15.1	14.8	11.7		15.1	23.7	
Actuated g/C Ratio	0.36	0.36	0.36		0.19	0.23	0.23	0.18		0.23	0.36	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	341	617	508		329	298	191	562		374	1062	
v/s Ratio Prot	c0.11	0.12			0.16	c0.19	0.03	0.08		0.12	0.17	
v/s Ratio Perm	c0.21		0.03				c0.13					
v/c Ratio	0.88	0.33	0.07		0.82	0.81	0.71	0.44		0.51	0.46	
Uniform Delay, d1	17.8	15.2	13.7		25.3	23.8	21.8	23.9		21.9	16.0	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.5	0.3	0.1		15.0	15.4	11.8	0.6		1.1	0.3	
Delay (s)	39.2	15.5	13.8		40.3	39.2	33.6	24.5		23.0	16.3	
Level of Service	D	B	B		D	D	C	C		C	B	
Approach Delay (s)		27.0			39.8			27.6			17.7	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	65.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

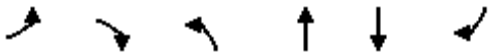
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	408	27	23	386
Future Volume (Veh/h)	0	0	408	27	23	386
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	443	29	25	420
Pedestrians	187					
Lane Width (m)	0.0					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			36			233
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	904	423			659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	822	321			567	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			97	
cM capacity (veh/h)	293	649			977	

Direction, Lane #	NB 1	NB 2	SB 1	SB 2
Volume Total	295	177	165	280
Volume Left	0	0	25	0
Volume Right	0	29	0	0
cSH	1700	1700	977	1700
Volume to Capacity	0.17	0.10	0.03	0.16
Queue Length 95th (m)	0.0	0.0	0.6	0.0
Control Delay (s)	0.0	0.0	1.5	0.0
Lane LOS			A	
Approach Delay (s)	0.0		0.6	
Approach LOS				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	172	182	428	419
Act Effct Green (s)	24.0	24.0	34.0	25.0
Actuated g/C Ratio	0.34	0.34	0.49	0.36
v/c Ratio	0.36	0.32	0.47	0.39
Control Delay	19.9	4.7	14.1	10.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.9	4.7	14.1	10.9
LOS	B	A	B	B
Approach Delay	12.1		14.1	10.9
Approach LOS	B		B	B
Queue Length 50th (m)	17.4	0.0	19.4	12.6
Queue Length 95th (m)	33.0	12.3	31.3	23.3
Internal Link Dist (m)	172.4		31.8	11.6
Turn Bay Length (m)		15.0		
Base Capacity (vph)	484	568	912	1083
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.32	0.47	0.39

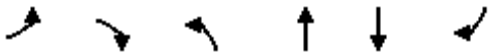
Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 12.4	Intersection LOS: B
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	158	167	117	277	231	155
Future Volume (vph)	158	167	117	277	231	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.93	
Flpb, ped/bikes	0.87	1.00		0.98	1.00	
Frt	1.00	0.85		1.00	0.94	
Flt Protected	0.95	1.00		0.99	1.00	
Satd. Flow (prot)	1413	1308		2919	2732	
Flt Permitted	0.95	1.00		0.63	1.00	
Satd. Flow (perm)	1413	1308		1877	2732	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	182	127	301	251	168
RTOR Reduction (vph)	0	120	0	0	108	0
Lane Group Flow (vph)	172	62	0	428	311	0
Confl. Peds. (#/hr)	149		112			112
Heavy Vehicles (%)	0%	0%	2%	2%	6%	1%
Parking (#/hr)		0		0		
Turn Type	Perm	Perm	custom	NA	NA	
Protected Phases				2	6	
Permitted Phases	8	8	5			
Actuated Green, G (s)	24.0	24.0		34.0	25.0	
Effective Green, g (s)	24.0	24.0		34.0	25.0	
Actuated g/C Ratio	0.34	0.34		0.49	0.36	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Lane Grp Cap (vph)	484	448		911	975	
v/s Ratio Prot					0.11	
v/s Ratio Perm	c0.12	0.05		c0.23		
v/c Ratio	0.36	0.14		0.47	0.32	
Uniform Delay, d1	17.2	15.9		12.0	16.3	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	0.6		1.7	0.9	
Delay (s)	19.2	16.5		13.7	17.2	
Level of Service	B	B		B	B	
Approach Delay (s)	17.8			13.7	17.2	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	74	55	356	336	55
Future Volume (Veh/h)	41	74	55	356	336	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	80	60	387	365	60
Pedestrians	13			96	26	
Lane Width (m)	3.6			3.6	3.6	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			8	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				88	56	
pX, platoon unblocked						
vC, conflicting volume	748	322	438			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	748	322	438			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	87	95			
cM capacity (veh/h)	323	619	1106			

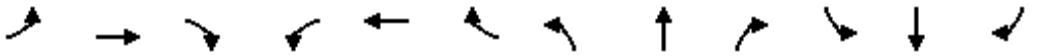
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	125	189	258	243	182
Volume Left	45	60	0	0	0
Volume Right	80	0	0	0	60
cSH	465	1106	1700	1700	1700
Volume to Capacity	0.27	0.05	0.15	0.14	0.11
Queue Length 95th (m)	8.6	1.4	0.0	0.0	0.0
Control Delay (s)	15.6	3.0	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.6	1.3		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	271	113	269	157	327	113	344
Act Effct Green (s)	18.2	18.2	18.2	18.2	25.2	6.0	34.2
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.39	0.09	0.53
v/c Ratio	0.86	0.29	0.69	0.40	0.36	0.82	0.50
Control Delay	47.5	7.9	30.2	11.4	14.9	76.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	47.5	7.9	30.2	11.4	16.0	76.0	12.3
LOS	D	A	C	B	B	E	B
Approach Delay	35.8		23.2		16.0		28.0
Approach LOS	D		C		B		C
Queue Length 50th (m)	31.8	1.7	29.7	5.9	13.4	14.4	21.4
Queue Length 95th (m)	#66.5	11.9	52.8	19.5	26.0	#44.2	49.7
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	420	479	519	488	910	138	689
Starvation Cap Reductn	0	0	0	0	354	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.24	0.52	0.32	0.59	0.82	0.50

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 64.5	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

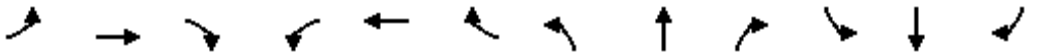


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	167	104	51	197	144	61	194	46	104	205	111
Future Volume (vph)	82	167	104	51	197	144	61	194	46	104	205	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.92		1.00	0.91		0.96		1.00	0.88	
Flpb, ped/bikes		0.98	1.00		0.99	1.00		0.96		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.95	
Flt Protected		0.98	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1590	1132		1615	1157		2778		1477	1264	
Flt Permitted		0.70	1.00		0.85	1.00		0.82		0.95	1.00	
Satd. Flow (perm)		1124	1132		1386	1157		2297		1477	1264	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	182	113	55	214	157	66	211	50	113	223	121
RTOR Reduction (vph)	0	0	67	0	0	67	0	20	0	0	25	0
Lane Group Flow (vph)	0	271	46	0	269	90	0	307	0	113	319	0
Confl. Peds. (#/hr)	94		86	86		94	196		140	140		196
Heavy Vehicles (%)	0%	6%	6%	3%	4%	3%	13%	1%	9%	10%	3%	0%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		18.2	18.2		18.2	18.2		25.2		6.0	34.2	
Effective Green, g (s)		18.2	18.2		18.2	18.2		25.2		6.0	34.2	
Actuated g/C Ratio		0.28	0.28		0.28	0.28		0.39		0.09	0.53	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		317	319		391	326		898		137	671	
v/s Ratio Prot										c0.08		
v/s Ratio Perm		c0.24	0.04		0.19	0.08		0.13			c0.25	
v/c Ratio		0.85	0.14		0.69	0.27		0.34		0.82	0.47	
Uniform Delay, d1		21.9	17.3		20.6	18.0		13.8		28.7	9.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		19.6	0.2		5.0	0.5		0.2		31.5	2.4	
Delay (s)		41.4	17.5		25.6	18.4		14.0		60.2	11.9	
Level of Service		D	B		C	B		B		E	B	
Approach Delay (s)		34.4			22.9			14.0			23.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	101	24	26	28	257	24	375
Act Effct Green (s)	11.1	11.1	11.1	36.7	36.7	40.1	38.4
Actuated g/C Ratio	0.20	0.20	0.20	0.64	0.64	0.70	0.67
v/c Ratio	0.44	0.12	0.10	0.05	0.25	0.05	0.35
Control Delay	22.8	20.4	0.8	8.2	8.1	4.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Total Delay	22.8	20.4	0.8	8.2	8.1	4.4	7.8
LOS	C	C	A	A	A	A	A
Approach Delay	22.8	10.2			8.1		7.6
Approach LOS	C	B			A		A
Queue Length 50th (m)	7.4	2.2	0.0	1.0	10.3	0.7	14.9
Queue Length 95th (m)	19.6	7.4	0.0	6.2	35.4	3.2	35.2
Internal Link Dist (m)	137.9	42.7			74.2		39.6
Turn Bay Length (m)			30.0	20.0			
Base Capacity (vph)	468	423	452	571	1047	475	1079
Starvation Cap Reductn	0	0	0	0	0	0	495
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.06	0.06	0.05	0.25	0.05	0.64

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 56.9	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 9.7	Intersection LOS: A
Intersection Capacity Utilization 57.2%	ICU Level of Service B
Analysis Period (min) 15	



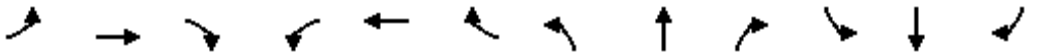
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	1	22	19	3	24	26	211	26	22	238	107
Future Volume (vph)	70	1	22	19	3	24	26	211	26	22	238	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	0.94	1.00	0.99		1.00	0.98	
Flpb, ped/bikes		0.97			0.98	1.00	0.97	1.00		0.98	1.00	
Frt		0.97			1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected		0.96			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1369			1284	951	1572	1624		1061	1583	
Flt Permitted		0.76			0.75	1.00	0.54	1.00		0.55	1.00	
Satd. Flow (perm)		1085			1007	951	891	1624		618	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1	24	21	3	26	28	229	28	24	259	116
RTOR Reduction (vph)	0	20	0	0	0	22	0	4	0	0	16	0
Lane Group Flow (vph)	0	81	0	0	24	4	28	253	0	24	359	0
Confl. Peds. (#/hr)	52		21	21		52	45		48	48		45
Heavy Vehicles (%)	0%	0%	0%	28%	0%	44%	0%	2%	10%	50%	1%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA	Perm	custom	NA		pm+pt	NA	
Protected Phases		8			4					1	6	
Permitted Phases	8			4		4	2	2		6		
Actuated Green, G (s)		9.0			9.0	9.0	35.4	35.4		39.5	39.5	
Effective Green, g (s)		9.0			9.0	9.0	35.4	35.4		39.5	39.5	
Actuated g/C Ratio		0.15			0.15	0.15	0.59	0.59		0.65	0.65	
Clearance Time (s)		6.0			6.0	6.0	6.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		161			149	141	521	950		411	1033	
v/s Ratio Prot										0.00	c0.23	
v/s Ratio Perm		c0.07			0.02	0.00	0.03	0.16		0.04		
v/c Ratio		0.50			0.16	0.03	0.05	0.27		0.06	0.35	
Uniform Delay, d1		23.7			22.5	22.0	5.4	6.2		3.8	4.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.4			0.5	0.1	0.2	0.7		0.1	0.9	
Delay (s)		26.1			23.0	22.1	5.6	6.9		3.9	5.6	
Level of Service		C			C	C	A	A		A	A	
Approach Delay (s)		26.1			22.5			6.7			5.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	228	328	73	465	362	73	149	162	535
Act Effct Green (s)	52.7	49.6	49.6	32.8	50.5	25.8	13.6	14.6	21.8
Actuated g/C Ratio	0.56	0.53	0.53	0.35	0.54	0.28	0.15	0.16	0.23
v/c Ratio	0.62	0.41	0.10	0.82	0.55	0.29	0.35	0.65	0.67
Control Delay	19.0	15.5	2.9	42.8	17.3	26.1	38.8	54.1	28.6
Queue Delay	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	15.7	2.9	42.8	17.3	26.1	38.8	54.1	28.6
LOS	B	B	A	D	B	C	D	D	C
Approach Delay		15.5		31.6			34.6		34.5
Approach LOS		B		C			C		C
Queue Length 50th (m)	20.4	34.3	0.0	76.5	34.9	9.3	13.0	28.8	34.4
Queue Length 95th (m)	42.9	67.3	6.3	#166.3	87.3	22.9	26.1	#68.8	63.2
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	535	1174	1035	730	708	292	713	311	1026
Starvation Cap Reductn	32	325	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.39	0.07	0.64	0.51	0.25	0.21	0.52	0.52

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 93.5			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



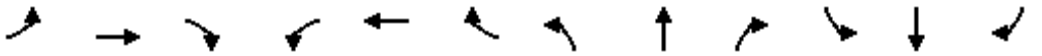
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	302	67	0	428	333	67	121	16	149	255	237
Future Volume (vph)	210	302	67	0	428	333	67	121	16	149	255	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.96		1.00	0.98	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1449	1513	1322		1613	1225	1404	2885		1593	2863	
Flt Permitted	0.25	1.00	1.00		1.00	1.00	0.45	1.00		0.95	1.00	
Satd. Flow (perm)	375	1513	1322		1613	1225	668	2885		1593	2863	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	328	73	0	465	362	73	132	17	162	277	258
RTOR Reduction (vph)	0	0	34	0	0	0	0	8	0	0	134	0
Lane Group Flow (vph)	228	328	39	0	465	362	73	141	0	162	401	0
Confl. Peds. (#/hr)	13		25	25		13	25		60	60		25
Heavy Vehicles (%)	12%	13%	6%	2%	6%	5%	15%	10%	0%	2%	5%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	pm+ov	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8			4	2					
Actuated Green, G (s)	49.6	49.6	49.6		33.0	47.6	21.8	14.5		14.6	21.8	
Effective Green, g (s)	49.6	49.6	49.6		33.0	47.6	21.8	14.5		14.6	21.8	
Actuated g/C Ratio	0.53	0.53	0.53		0.35	0.51	0.23	0.15		0.16	0.23	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	354	800	699		568	622	212	446		248	666	
v/s Ratio Prot	c0.09	0.22			c0.29	0.09	0.03	0.05		c0.10	c0.14	
v/s Ratio Perm	0.25		0.03			0.20	0.05					
v/c Ratio	0.64	0.41	0.06		0.82	0.58	0.34	0.32		0.65	0.60	
Uniform Delay, d1	14.8	13.3	10.7		27.6	16.1	29.1	35.2		37.2	32.1	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.0	0.3	0.0		9.0	1.4	1.0	0.4		6.1	1.5	
Delay (s)	18.8	13.6	10.7		36.6	17.5	30.1	35.6		43.2	33.6	
Level of Service	B	B	B		D	B	C	D		D	C	
Approach Delay (s)		15.2			28.2			33.8			35.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	93.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	459	45	444	138	367	66	365
Act Effct Green (s)	29.0	29.0	29.0	29.0	20.0	6.0	29.0
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.29	0.09	0.41
v/c Ratio	0.85	0.10	0.99	0.27	0.59	0.61	0.66
Control Delay	36.1	1.1	65.2	6.8	24.2	57.3	22.8
Queue Delay	0.0	0.0	0.0	0.0	2.7	0.0	0.0
Total Delay	36.1	1.1	65.2	6.8	26.9	57.3	22.8
LOS	D	A	E	A	C	E	C
Approach Delay	32.9		51.4		26.9		28.1
Approach LOS	C		D		C		C
Queue Length 50th (m)	55.2	0.0	58.6	3.6	20.7	9.0	37.4
Queue Length 95th (m)	#108.8	1.4	#117.4	14.0	34.4	#26.9	67.0
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	541	452	447	516	624	108	553
Starvation Cap Reductn	0	0	0	0	154	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.10	0.99	0.27	0.78	0.61	0.66

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 106.4%	ICU Level of Service G
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



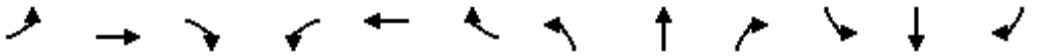
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	384	41	73	336	127	63	223	52	61	287	49
Future Volume (vph)	39	384	41	73	336	127	63	223	52	61	287	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.95		1.00	0.94		0.97		1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.99		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.98	
Flt Protected		1.00	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1401	960		1504	1115		2588		1269	1317	
Flt Permitted		0.93	1.00		0.71	1.00		0.81		0.95	1.00	
Satd. Flow (perm)		1306	960		1081	1115		2110		1269	1317	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	417	45	79	365	138	68	242	57	66	312	53
RTOR Reduction (vph)	0	0	26	0	0	55	0	21	0	0	9	0
Lane Group Flow (vph)	0	459	19	0	444	83	0	346	0	66	356	0
Confl. Peds. (#/hr)	56		38	38		56	76		107	107		76
Heavy Vehicles (%)	24%	21%	30%	14%	12%	10%	36%	10%	17%	28%	12%	11%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		29.0	29.0		29.0	29.0		20.0		6.0	29.0	
Effective Green, g (s)		29.0	29.0		29.0	29.0		20.0		6.0	29.0	
Actuated g/C Ratio		0.41	0.41		0.41	0.41		0.29		0.09	0.41	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		541	397		447	461		602		108	545	
v/s Ratio Prot										0.05		
v/s Ratio Perm		0.35	0.02		c0.41	0.07		0.16			c0.27	
v/c Ratio		0.85	0.05		0.99	0.18		0.57		0.61	0.65	
Uniform Delay, d1		18.5	12.2		20.4	13.0		21.4		30.9	16.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		11.8	0.0		40.6	0.2		1.3		9.8	6.0	
Delay (s)		30.3	12.3		61.0	13.2		22.7		40.7	22.5	
Level of Service		C	B		E	B		C		D	C	
Approach Delay (s)		28.7			49.7			22.7			25.3	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	412	436	90	557	303	166	281	213	570
Act Effct Green (s)	73.6	70.6	70.6	40.5	61.0	30.7	16.7	17.5	23.3
Actuated g/C Ratio	0.61	0.59	0.59	0.34	0.51	0.26	0.14	0.15	0.19
v/c Ratio	0.97	0.47	0.11	0.98	0.49	0.84	0.68	0.93	0.84
Control Delay	68.2	16.7	2.8	74.2	21.6	65.7	54.6	94.4	43.1
Queue Delay	7.7	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.9	21.3	2.8	74.2	21.6	65.7	54.6	94.4	43.1
LOS	E	C	A	E	C	E	D	F	D
Approach Delay		43.5		55.7			58.7		57.1
Approach LOS		D		E			E		E
Queue Length 50th (m)	80.9	57.7	0.0	135.6	44.2	30.6	33.3	52.6	50.5
Queue Length 95th (m)	#157.7	92.9	7.6	#224.6	75.0	#58.3	48.4	#106.3	72.6
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	426	932	806	566	616	199	543	230	795
Starvation Cap Reductn	15	413	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.84	0.11	0.98	0.49	0.83	0.52	0.93	0.72

Intersection Summary			
Cycle Length: 125			
Actuated Cycle Length: 119.8			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 52.7		Intersection LOS: D	
Intersection Capacity Utilization 99.3%		ICU Level of Service F	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



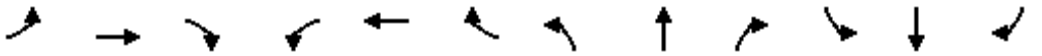
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	379	401	83	0	512	279	153	217	41	196	268	257
Future Volume (vph)	379	401	83	0	512	279	153	217	41	196	268	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.94		1.00	0.97	1.00	0.98		1.00	0.94	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1562	1583	1310		1676	1211	1461	2894		1577	2773	
Flt Permitted	0.12	1.00	1.00		1.00	1.00	0.26	1.00		0.95	1.00	
Satd. Flow (perm)	191	1583	1310		1676	1211	403	2894		1577	2773	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	436	90	0	557	303	166	236	45	213	291	279
RTOR Reduction (vph)	0	0	37	0	0	0	0	13	0	0	144	0
Lane Group Flow (vph)	412	436	53	0	557	303	166	268	0	213	426	0
Confl. Peds. (#/hr)	23		42	42		23	75		40	40		75
Heavy Vehicles (%)	4%	8%	4%	2%	2%	5%	10%	8%	4%	3%	3%	0%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	pm+ov	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8			4	2					
Actuated Green, G (s)	70.6	70.6	70.6		40.6	58.1	27.6	16.7		17.5	23.3	
Effective Green, g (s)	70.6	70.6	70.6		40.6	58.1	27.6	16.7		17.5	23.3	
Actuated g/C Ratio	0.59	0.59	0.59		0.34	0.48	0.23	0.14		0.15	0.19	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	421	932	772		567	587	189	403		230	539	
v/s Ratio Prot	c0.22	0.28			0.33	0.08	0.08	0.09		c0.14	c0.15	
v/s Ratio Perm	c0.36		0.04			0.17	0.12					
v/c Ratio	0.98	0.47	0.07		0.98	0.52	0.88	0.67		0.93	0.79	
Uniform Delay, d1	34.6	13.9	10.5		39.2	21.2	40.8	48.9		50.5	45.9	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.8	0.4	0.0		33.1	0.8	33.7	4.1		39.2	7.7	
Delay (s)	72.4	14.3	10.6		72.3	22.0	74.5	53.0		89.7	53.7	
Level of Service	E	B	B		E	C	E	D		F	D	
Approach Delay (s)		39.5			54.6			61.0			63.5	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	119.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	494	64	381	165	481	182	383
Act Effct Green (s)	26.0	26.0	26.0	26.0	17.5	9.0	29.5
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.26	0.13	0.44
v/c Ratio	0.93	0.16	0.91	0.35	0.81	0.97	0.68
Control Delay	48.1	2.8	50.9	9.9	33.8	93.4	21.2
Queue Delay	0.0	0.0	0.0	0.0	8.0	0.0	0.0
Total Delay	48.1	2.8	50.9	9.9	41.8	93.4	21.2
LOS	D	A	D	A	D	F	C
Approach Delay	42.9		38.5		41.8		44.5
Approach LOS	D		D		D		D
Queue Length 50th (m)	63.6	0.0	48.7	6.3	29.6	25.2	35.9
Queue Length 95th (m)	#124.0	4.3	#102.3	20.3	#48.0	#63.5	66.3
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	534	408	418	472	679	188	609
Starvation Cap Reductn	0	0	0	0	159	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.16	0.91	0.35	0.93	0.97	0.63

Intersection Summary			
Cycle Length: 70			
Actuated Cycle Length: 67.6			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 42.0		Intersection LOS: D	
Intersection Capacity Utilization 107.0%		ICU Level of Service G	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



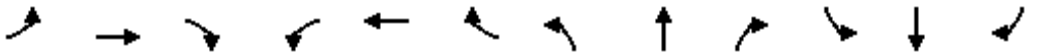
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	411	59	54	296	152	50	331	62	167	274	78
Future Volume (vph)	43	411	59	54	296	152	50	331	62	167	274	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.84		1.00	0.90		0.95		1.00	0.92	
Flpb, ped/bikes		1.00	1.00		0.99	1.00		0.98		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.97	
Flt Protected		1.00	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1484	918		1557	1080		2598		1413	1259	
Flt Permitted		0.93	1.00		0.69	1.00		0.86		0.95	1.00	
Satd. Flow (perm)		1387	918		1086	1080		2235		1413	1259	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	447	64	59	322	165	54	360	67	182	298	85
RTOR Reduction (vph)	0	0	39	0	0	58	0	19	0	0	15	0
Lane Group Flow (vph)	0	494	25	0	381	107	0	462	0	182	368	0
Confl. Peds. (#/hr)	102		169	169		102	199		194	194		199
Heavy Vehicles (%)	6%	15%	20%	8%	8%	9%	35%	11%	9%	15%	11%	2%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		26.0	26.0		26.0	26.0		17.5		9.0	29.5	
Effective Green, g (s)		26.0	26.0		26.0	26.0		17.5		9.0	29.5	
Actuated g/C Ratio		0.39	0.39		0.39	0.39		0.26		0.13	0.44	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		534	353		418	416		579		188	550	
v/s Ratio Prot										c0.13		
v/s Ratio Perm		c0.36	0.03		0.35	0.10		c0.21			0.29	
v/c Ratio		0.93	0.07		0.91	0.26		0.80		0.97	0.67	
Uniform Delay, d1		19.8	13.1		19.7	14.2		23.3		29.1	15.1	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		22.0	0.1		23.8	0.3		7.5		55.7	3.1	
Delay (s)		41.8	13.2		43.4	14.5		30.9		84.8	18.2	
Level of Service		D	B		D	B		C		F	B	
Approach Delay (s)		38.5			34.7			30.9			39.7	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	67.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	299	205	98	270	242	136	265	189	722
Act Effct Green (s)	42.2	39.2	39.2	19.8	18.1	29.9	16.8	18.1	24.9
Actuated g/C Ratio	0.47	0.44	0.44	0.22	0.20	0.33	0.19	0.20	0.28
v/c Ratio	0.64	0.27	0.15	0.71	0.93	0.46	0.44	0.58	0.77
Control Delay	22.1	17.1	3.7	44.8	80.6	22.8	34.5	44.9	29.6
Queue Delay	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	17.2	3.7	44.8	80.6	22.8	34.5	44.9	29.6
LOS	C	B	A	D	F	C	C	D	C
Approach Delay		17.6		61.7			30.5		32.8
Approach LOS		B		E			C		C
Queue Length 50th (m)	34.9	23.7	0.0	46.5	44.8	14.0	21.2	32.2	47.9
Queue Length 95th (m)	56.6	40.2	8.4	81.8	#116.4	33.5	39.7	#74.3	86.3
Internal Link Dist (m)		38.3		159.5			209.2		157.9
Turn Bay Length (m)	55.0				75.0	25.0		20.0	
Base Capacity (vph)	601	1374	1133	798	261	321	801	327	1074
Starvation Cap Reductn	56	316	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.19	0.09	0.34	0.93	0.42	0.33	0.58	0.67

Intersection Summary	
Cycle Length: 125	
Actuated Cycle Length: 89.5	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



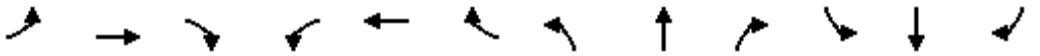
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	189	90	0	248	223	125	212	32	174	335	329
Future Volume (vph)	275	189	90	0	248	223	125	212	32	174	335	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.96		1.00	1.00	1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1620	1710	1401		1710	1295	1619	3135		1624	2916	
Flt Permitted	0.35	1.00	1.00		1.00	1.00	0.31	1.00		0.95	1.00	
Satd. Flow (perm)	603	1710	1401		1710	1295	523	3135		1624	2916	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	205	98	0	270	242	136	230	35	189	364	358
RTOR Reduction (vph)	0	0	55	0	0	0	0	10	0	0	133	0
Lane Group Flow (vph)	299	205	43	0	270	242	136	255	0	189	589	0
Confl. Peds. (#/hr)	18		27	27		18	33		29	29		33
Heavy Vehicles (%)	0%	0%	0%	2%	0%	1%	0%	0%	4%	0%	0%	1%
Parking (#/hr)						0			0			
Turn Type	pm+pt	NA	Perm		NA	Over	pm+pt	NA		Prot	NA	
Protected Phases	3	8			4	1	5	2		1	6	
Permitted Phases	8		8				2					
Actuated Green, G (s)	39.1	39.1	39.1		19.8	18.0	26.9	16.9		18.0	24.9	
Effective Green, g (s)	39.1	39.1	39.1		19.8	18.0	26.9	16.9		18.0	24.9	
Actuated g/C Ratio	0.44	0.44	0.44		0.22	0.20	0.30	0.19		0.20	0.28	
Clearance Time (s)	3.0	6.0	6.0		6.0	3.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	451	751	615		380	261	281	595		328	815	
v/s Ratio Prot	c0.12	0.12			0.16	c0.19	0.05	0.08		0.12	c0.20	
v/s Ratio Perm	c0.17		0.03				0.09					
v/c Ratio	0.66	0.27	0.07		0.71	0.93	0.48	0.43		0.58	0.72	
Uniform Delay, d1	17.8	15.9	14.4		32.0	34.9	23.7	31.8		32.1	28.9	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.6	0.2	0.0		6.2	36.3	1.3	0.5		2.4	3.2	
Delay (s)	21.5	16.1	14.5		38.1	71.2	25.0	32.3		34.5	32.1	
Level of Service	C	B	B		D	E	C	C		C	C	
Approach Delay (s)		18.5			53.7			29.8			32.6	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	271	113	269	157	327	113	344
Act Effct Green (s)	17.9	17.9	17.9	17.9	21.4	8.8	33.2
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.34	0.14	0.53
v/c Ratio	0.85	0.29	0.68	0.40	0.41	0.55	0.50
Control Delay	45.1	7.7	29.2	11.1	18.3	37.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.0	0.0
Total Delay	45.1	7.7	29.2	11.1	19.0	37.5	12.5
LOS	D	A	C	B	B	D	B
Approach Delay	34.1		22.6		19.0		18.7
Approach LOS	C		C		B		B
Queue Length 50th (m)	30.9	1.7	28.9	5.8	14.9	12.9	20.8
Queue Length 95th (m)	#63.7	11.6	51.5	19.0	29.5	#30.6	51.5
Internal Link Dist (m)	139.8		216.8		39.6		64.3
Turn Bay Length (m)		7.0		7.0			
Base Capacity (vph)	450	504	555	513	788	235	682
Starvation Cap Reductn	0	0	0	0	210	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.22	0.48	0.31	0.57	0.48	0.50

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 63.2	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 96.7%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	167	104	51	197	144	61	194	46	104	205	111
Future Volume (vph)	82	167	104	51	197	144	61	194	46	104	205	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00		0.95		1.00	1.00	
Frpb, ped/bikes		1.00	0.92		1.00	0.91		0.96		1.00	0.89	
Flpb, ped/bikes		0.98	1.00		0.99	1.00		0.96		1.00	1.00	
Frt		1.00	0.85		1.00	0.85		0.98		1.00	0.95	
Flt Protected		0.98	1.00		0.99	1.00		0.99		0.95	1.00	
Satd. Flow (prot)		1590	1134		1615	1159		2783		1477	1268	
Flt Permitted		0.70	1.00		0.86	1.00		0.81		0.95	1.00	
Satd. Flow (perm)		1134	1134		1396	1159		2287		1477	1268	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	182	113	55	214	157	66	211	50	113	223	121
RTOR Reduction (vph)	0	0	67	0	0	67	0	20	0	0	25	0
Lane Group Flow (vph)	0	271	46	0	269	90	0	307	0	113	319	0
Confl. Peds. (#/hr)	94		86	86		94	196		140	140		196
Heavy Vehicles (%)	0%	6%	6%	3%	4%	3%	13%	1%	9%	10%	3%	0%
Parking (#/hr)			0			0					0	
Turn Type	custom	NA	custom	custom	NA	custom	Perm	NA		Prot	NA	
Protected Phases								2		1		
Permitted Phases	8	8	8	4	4	4	2				6	
Actuated Green, G (s)		17.9	17.9		17.9	17.9		21.4		8.8	33.2	
Effective Green, g (s)		17.9	17.9		17.9	17.9		21.4		8.8	33.2	
Actuated g/C Ratio		0.28	0.28		0.28	0.28		0.34		0.14	0.53	
Clearance Time (s)		6.0	6.0		6.0	6.0		6.0		3.0	6.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)		321	321		396	328		775		205	667	
v/s Ratio Prot										c0.08		
v/s Ratio Perm		c0.24	0.04		0.19	0.08		0.13			c0.25	
v/c Ratio		0.84	0.14		0.68	0.27		0.40		0.55	0.48	
Uniform Delay, d1		21.3	16.9		20.1	17.5		15.9		25.3	9.5	
Progression Factor		1.00	1.00		1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2		18.0	0.2		4.6	0.5		0.3		3.2	2.4	
Delay (s)		39.3	17.1		24.6	18.0		16.3		28.5	11.9	
Level of Service		D	B		C	B		B		C	B	
Approach Delay (s)		32.7			22.2			16.3			16.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX E

COLLISION DATA

Accident Date	Accident Year	Location	Environment Condition 1	Light	Classification Of Accident	Initial Impact Type	Pedestrian Involved	Cyclist Involved	Vehicle 2 Manoeuver	Vehicle 1 Manoeuver	Apparent Driver 1 Action	Self Reported
2018-02-17	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	08 - Dark, artificial	03 - P.D. only	07 - SMV other	FALSE	FALSE		01 - Going ahead	99 - Other	FALSE
2018-02-07	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	03 - Snow	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	01 - Going ahead		TRUE
2016-02-24	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	04 - Freezing Rain	01 - Daylight	02 - Non-fatal injury	07 - SMV other	FALSE	FALSE		01 - Going ahead	04 - Speed too fast for condition	FALSE
2018-11-14	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	08 - Dark, artificial	02 - Non-fatal injury	05 - Turning movement	FALSE	FALSE	01 - Going ahead	04 - Turning left	08 - Failed to yield right-of-way	FALSE
2016-11-26	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	05 - Dusk	04 - Non-reportable	03 - Rear end	FALSE	FALSE		10 - Stopped		TRUE
2016-12-19	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE	07 - Changing lanes	01 - Going ahead		TRUE
2018-10-25	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	07 - Dark		03 - Rear end	FALSE	FALSE		01 - Going ahead		TRUE
2018-08-07	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE	99 - Other	07 - Changing lanes	08 - Failed to yield right-of-way	FALSE
2016-12-17	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	03 - Snow	08 - Dark, artificial	03 - P.D. only	05 - Turning movement	FALSE	FALSE	05 - Turning right	01 - Going ahead	07 - Disobeyed traffic control	FALSE
2018-04-18	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	06 - Making "U" turn	01 - Going ahead	02 - Following too close	FALSE
2017-03-24	2017	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	04 - Turning left	01 - Going ahead	07 - Disobeyed traffic control	FALSE
2018-05-24	2018	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight		99 - Other	FALSE	FALSE	09 - Reversing	10 - Stopped		TRUE
2019-04-07	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight		01 - Approaching	FALSE	FALSE	01 - Going ahead	05 - Turning right		TRUE
2019-03-07	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight		05 - Turning movement	FALSE	FALSE	07 - Changing lanes	10 - Stopped		TRUE
2016-08-16	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	01 - Going ahead		TRUE
2019-12-09	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	FALSE	FALSE	01 - Going ahead	01 - Going ahead	07 - Disobeyed traffic control	FALSE
2019-07-12	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	05 - Turning right	05 - Turning right		TRUE
2019-11-17	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	02 - Slowing or stopping	10 - Stopped		TRUE
2020-02-21	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	08 - Dark, artificial	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	04 - Turning left		TRUE
2019-10-22	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	08 - Dark, artificial	04 - Non-reportable	07 - SMV other	FALSE	FALSE		01 - Going ahead	10 - Lost control	FALSE
2019-10-16	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	01 - Daylight	04 - Non-reportable	05 - Turning movement	FALSE	FALSE	01 - Going ahead	04 - Turning left	08 - Failed to yield right-of-way	FALSE
2016-02-11	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	01 - Going ahead		TRUE
2016-02-08	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	10 - Stopped	01 - Going ahead	99 - Other	FALSE
2019-11-02	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	04 - Turning left	05 - Turning right		TRUE
2019-05-01	2019	ERAMOSA RD @ WOOLWICH ST (I1054)	02 - Rain	01 - Daylight		03 - Rear end	FALSE	FALSE	10 - Stopped	05 - Turning right		TRUE
2020-01-06	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	03 - Snow	01 - Daylight	03 - P.D. only	07 - SMV other	FALSE	FALSE		07 - Changing lanes	04 - Speed too fast for condition	FALSE
2017-10-25	2017	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	FALSE	FALSE	01 - Going ahead	01 - Going ahead	07 - Disobeyed traffic control	FALSE
2016-07-05	2016	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	FALSE	FALSE	09 - Reversing	10 - Stopped	01 - Driving properly	TRUE
2020-02-13	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn	06 - Improper turn	FALSE
2020-03-10	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	08 - Dark, artificial	04 - Non-reportable	02 - Angle	FALSE	FALSE	01 - Going ahead	05 - Turning right	01 - Driving properly	TRUE
2020-09-01	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	06 - Improper turn	TRUE
2020-12-09	2020	ERAMOSA RD @ WOOLWICH ST (I1054)	01 - Clear	08 - Dark, artificial	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE	10 - Stopped	01 - Going ahead		TRUE
2018-01-28	2018	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	07 - Dark		99 - Other	FALSE	FALSE		10 - Stopped		TRUE
2016-03-31	2016	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	TRUE	FALSE		05 - Turning right	08 - Failed to yield right-of-way	FALSE
2018-01-26	2018	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	06 - Dusk, artificial	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	12 - Improper lane change	FALSE
2016-01-14	2016	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	04 - Non-reportable	02 - Angle	FALSE	FALSE	02 - Slowing or stopping	01 - Going ahead		TRUE
2017-07-25	2017	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight		05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn		TRUE
2017-07-12	2017	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight		03 - Rear end	FALSE	FALSE		10 - Stopped		TRUE
2017-10-17	2017	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE	02 - Slowing or stopping	07 - Changing lanes		TRUE
2019-02-24	2019	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn	08 - Failed to yield right-of-way	FALSE
2017-05-06	2017	MACDONELL ST @ WYNDHAM ST N (I1485)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	10 - Stopped	02 - Slowing or stopping	02 - Following too close	FALSE
2019-12-30	2019	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	FALSE	FALSE		10 - Stopped		TRUE
2018-09-21	2018	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	08 - Dark, artificial	04 - Non-reportable	99 - Other	FALSE	FALSE	10 - Stopped	09 - Reversing		FALSE
2018-04-05	2018	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	08 - Dark, artificial	02 - Non-fatal injury	07 - SMV other	TRUE	FALSE		02 - Slowing or stopping	01 - Driving properly	FALSE
2019-05-22	2019	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	06 - Making "U" turn	01 - Going ahead	09 - Improper passing	FALSE
2017-05-03	2017	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	TRUE	FALSE		05 - Turning right	99 - Other	FALSE
2016-07-27	2016	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	04 - Non-reportable	99 - Other	FALSE	FALSE	09 - Reversing	10 - Stopped	01 - Driving properly	TRUE
2020-06-14	2020	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	04 - Non-reportable	03 - Rear end	FALSE	FALSE	10 - Stopped	01 - Going ahead	01 - Driving properly	TRUE
2018-12-05	2018	MACDONELL ST @ WYNDHAM ST N (I1485)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	01 - Going ahead	10 - Stopped	01 - Driving properly	TRUE
2018-02-16	2018	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	07 - Dark	04 - Non-reportable	02 - Angle	FALSE	FALSE	01 - Going ahead	01 - Going ahead		TRUE
2017-07-15	2017	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2017-09-12	2017	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight	04 - Non-reportable	05 - Turning movement	FALSE	FALSE	04 - Turning left	01 - Going ahead		TRUE
2018-04-10	2018	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	05 - Turning right	06 - Improper turn	FALSE
2019-03-08	2019	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	05 - Turning right		TRUE
2019-04-27	2019	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	07 - Dark		06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	05 - Turning right		TRUE
2019-03-31	2019	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight		99 - Other	FALSE	FALSE	10 - Stopped	09 - Reversing		TRUE
2018-10-28	2018	WYNDHAM ST N @ CARDEN ST (I1486)	03 - Snow	07 - Dark	02 - Non-fatal injury	05 - Turning movement	FALSE	TRUE	04 - Turning left	01 - Going ahead	99 - Other	FALSE
2019-10-05	2019	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight	04 - Non-reportable	03 - Rear end	FALSE	FALSE	05 - Turning right	01 - Going ahead	02 - Following too close	FALSE
2019-11-16	2019	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	FALSE	FALSE	99 - Other	10 - Stopped		TRUE
2018-12-28	2018	WYNDHAM ST N @ CARDEN ST (I1486)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	10 - Stopped	02 - Slowing or stopping	02 - Following too close	TRUE
2017-12-24	2017	WYNDHAM ST N @ CORK ST E (I1488)	03 - Snow	08 - Dark, artificial	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	04 - Turning left	08 - Failed to yield right-of-way	FALSE
2017-05-02	2017	WYNDHAM ST N @ CORK ST E (I1488)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	03 - Overtaking	13 - Pulling away from shoulder or curb	08 - Failed to yield right-of-way	FALSE
2019-08-07	2019	WYNDHAM ST N @ CORK ST E (I1488)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	FALSE	FALSE	10 - Stopped	09 - Reversing	99 - Other	FALSE
2019-11-11	2019	WYNDHAM ST N @ CORK ST E (I1488)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	02 - Slowing or stopping	10 - Stopped		TRUE
2020-01-29	2020	WYNDHAM ST N @ CORK ST E (I1488)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	14 - Pulling onto shoulder or toward curb	99 - Other	FALSE
2018-12-17	2018	WYNDHAM ST N @ CORK ST E (I1488)	01 - Clear	08 - Dark, artificial	02 - Non-fatal injury	07 - SMV other	TRUE	FALSE		04 - Turning left	06 - Improper turn	FALSE
2020-02-20	2020	WYNDHAM ST N @ CORK ST E (I1488)	01 - Clear	01 - Daylight	04 - Non-reportable	05 - Turning movement	FALSE	FALSE	05 - Turning right	05 - Turning right	01 - Driving properly	TRUE
2020-02-01	2020	WYNDHAM ST N @ CORK ST E (I1488)	03 - Snow	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	12 - Improper lane change	FALSE
2019-02-15	2019	WYNDHAM ST N @ DOUGLAS ST (I1052)	01 - Clear	07 - Dark		03 - Rear end	FALSE	FALSE	02 - Slowing or stopping	10 - Stopped		TRUE
2016-10-17	2016	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	04 - Non-reportable	03 - Rear end	FALSE	FALSE		10 - Stopped		TRUE
2018-10-15	2018	WYNDHAM ST N @ QUEBEC ST (I1051)	07 - Fog, mist, smoke, dust	01 - Daylight		04 - Sideswipe	FALSE	FALSE	01 - Going ahead	10 - Stopped		TRUE
2018-04-10	2018	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	05 - Turning right	01 - Going ahead	02 - Following too close	FALSE
2019-04-19	2019	WYNDHAM ST N @ QUEBEC ST (I1051)	02 - Rain	08 - Dark, artificial	03 - P.D. only	03 - Rear end	FALSE	TRUE	02 - Slowing or stopping	10 - Stopped	01 - Driving properly	FALSE
2019-02-27	2019	WYNDHAM ST N @ QUEBEC ST (I1051)	03 - Snow	01 - Daylight		05 - Turning movement	FALSE	FALSE	10 - Stopped	05 - Turning right		TRUE
2016-08-19	2016	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	08 - Failed to yield right-of-way	FALSE
2019-06-27	2019	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	10 - Stopped	02 - Slowing or stopping	02 - Following too close	FALSE
2019-07-04	2019	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	05 - Turning right	10 - Stopped		TRUE
2018-12-26	2018	WYNDHAM ST N @ QUEBEC ST (I1051)	99 - Other	07 - Dark	03 - P.D. only	05 - Turning movement	FALSE	FALSE	02 - Slowing or stopping	04 - Turning left	01 - Driving properly	TRUE
2016-07-08	2016	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	07 - Dark	03 - P.D. only	99 - Other	FALSE	FALSE		10 - Stopped		TRUE
2016-05-09	2016	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	01 - Daylight	04 - Non-reportable	03 - Rear end	FALSE	FALSE	02 - Slowing or stopping	10 - Stopped	01 - Driving properly	TRUE
2019-12-19	2019	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	08 - Dark, artificial	02 - Non-fatal injury	05 - Turning movement	FALSE	FALSE	01 - Going ahead	05 - Turning right	02 - Following too close	FALSE
2020-01-15	2020	WYNDHAM ST N @ QUEBEC ST (I1051)	01 - Clear	08 - Dark, artificial	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	04 - Turning left	06 - Improper turn	FALSE
2016-06-02	2016	WYNDHAM ST N btwn CARDEN ST & MACDONELL ST (S6505)	01 - Clear	01 - Daylight	03 - P.D. only	07 - SMV other	FALSE	FALSE		01 - Going ahead	99 - Other	FALSE
2018-12-30	2018	WYNDHAM ST N btwn CARDEN ST & MACDONELL ST (S6505)	02 - Rain	08 - Dark, artificial	03 - P.D. only	03 - Rear end	FALSE	FALSE	01 - Going ahead	01 - Going ahead	03 - Exceeding speed limit	FALSE
2020-02-27	2020	WYNDHAM ST N btwn CARDEN ST & MACDONELL ST (S6505)	03 - Snow	08 - Dark, artificial	04 - Non-reportable	06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked			TRUE
2016-11-28	2016	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	04 - Non-reportable	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE

2018-01-09	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight		03 - Rear end	FALSE	FALSE	01 - Going ahead	02 - Slowing or stopping		TRUE
2016-08-20	2016	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	02 - Rain	07 - Dark	02 - Non-fatal injury	07 - SMV other	TRUE	FALSE		06 - Making "U" turn	01 - Driving properly	FALSE
2018-12-31	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	13 - Pulling away from shoulder or curb	08 - Failed to yield right-of-way	FALSE
2018-10-24	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight		05 - Turning movement	FALSE	FALSE	05 - Turning right	10 - Stopped		TRUE
2018-08-12	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	01 - Going ahead	10 - Lost control	FALSE
2018-03-14	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	05 - Dusk		04 - Sideswipe	FALSE	FALSE	13 - Pulling away from shoulder or curb	01 - Going ahead		TRUE
2017-05-15	2017	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	13 - Pulling away from shoulder or curb	08 - Failed to yield right-of-way	FALSE
2017-09-10	2017	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	04 - Non-reportable	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2017-03-28	2017	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight		04 - Sideswipe	FALSE	FALSE		01 - Going ahead		TRUE
2019-03-27	2019	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE	14 - Pulling onto shoulder or toward curb	11 - Parked		TRUE
2019-07-11	2019	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE	01 - Going ahead	11 - Parked		TRUE
2018-12-09	2018	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	12 - Improper lane change	FALSE
2017-08-17	2017	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE	01 - Going ahead	02 - Slowing or stopping	99 - Other	FALSE
2019-09-10	2019	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2016-05-10	2016	WYNDHAM ST N btwn CORK ST E & MACDONELL ST (S6507)	01 - Clear	08 - Dark, artificial	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn	08 - Failed to yield right-of-way	TRUE
2018-02-15	2018	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE	02 - Slowing or stopping	07 - Changing lanes		TRUE
2016-12-21	2016	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	04 - Non-reportable	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2018-11-29	2018	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	07 - Dark		04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes		TRUE
2018-11-24	2018	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	02 - Rain	07 - Dark		99 - Other	FALSE	FALSE	09 - Reversing	10 - Stopped		TRUE
2019-01-23	2019	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn	06 - Improper turn	FALSE
2019-08-08	2019	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	FALSE	FALSE		10 - Stopped		TRUE
2019-12-03	2019	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	FALSE	FALSE	09 - Reversing	07 - Changing lanes		TRUE
2018-11-01	2018	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	08 - Failed to yield right-of-way	FALSE
2019-05-07	2019	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight		04 - Sideswipe	FALSE	FALSE		10 - Stopped		TRUE
2016-02-27	2016	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	07 - Changing lanes	06 - Improper turn	TRUE
2020-10-21	2020	WYNDHAM ST N btwn CORK ST E & QUEBEC ST (S6469)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	FALSE	FALSE	09 - Reversing	10 - Stopped	01 - Driving properly	TRUE
2017-05-15	2017	WYNDHAM ST N btwn DOUGLAS ST & QUEBEC ST (S6472)	01 - Clear	01 - Daylight	02 - Non-fatal injury	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	01 - Going ahead	12 - Improper lane change	FALSE
2019-05-12	2019	WYNDHAM ST N btwn DOUGLAS ST & QUEBEC ST (S6472)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2016-12-14	2016	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	04 - Non-reportable	04 - Sideswipe	FALSE	FALSE		01 - Going ahead		TRUE
2016-06-30	2016	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	04 - Non-reportable	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn		TRUE
2019-01-18	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2018-09-11	2018	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		04 - Sideswipe	FALSE	FALSE	02 - Slowing or stopping	01 - Going ahead		TRUE
2017-10-16	2017	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	13 - Pulling away from shoulder or curb	08 - Failed to yield right-of-way	FALSE
2018-05-17	2018	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		05 - Turning movement	FALSE	FALSE		10 - Stopped		TRUE
2017-05-08	2017	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE	13 - Pulling away from shoulder or curb	11 - Parked		TRUE
2019-04-16	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	14 - Pulling onto shoulder or toward curb		TRUE
2019-03-01	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2019-08-29	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE	09 - Reversing	11 - Parked		TRUE
2019-06-29	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE		01 - Going ahead		TRUE
2016-08-29	2016	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	FALSE	FALSE	01 - Going ahead	99 - Other	99 - Other	FALSE
2017-02-21	2017	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	04 - Non-reportable	06 - SMV unattended vehicle	FALSE	FALSE	11 - Parked	09 - Reversing		TRUE
2019-12-04	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	07 - Dark	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2019-05-06	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight		06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2019-09-17	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	01 - Daylight	03 - P.D. only	06 - SMV unattended vehicle	FALSE	FALSE		11 - Parked		TRUE
2019-11-07	2019	WYNDHAM ST N btwn DOUGLAS ST & WOOLWICH ST (S6485)	01 - Clear	08 - Dark, artificial	02 - Non-fatal injury	05 - Turning movement	FALSE	FALSE	01 - Going ahead	06 - Making "U" turn	06 - Improper turn	FALSE

ATTACHMENT 2

Problem and Opportunity

Wyndham Street Municipal Class EA

Problem and Opportunity Statement Technical Memorandum

Final

Prepared for:
City of Guelph

RVA 215632.01

May 28, 2021

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May 28, 2021

RVA 215632.01

City of Guelph
1 Carden Street
Guelph, ON N1H 3A1

Attention: David Di Pietro

Dear David:

Re: Wyndham Street Schedule B Municipal Class Environmental Assessment
Problem and Opportunity Statement Technical Memorandum

Please find enclosed the Problem and Opportunity Statement Technical Memorandum for the Wyndham Street Municipal Class Environmental Assessment (Schedule B), completed by R.V. Anderson Associates Limited.

If you have any questions, please do not hesitate to contact the undersigned by email or at 905-685-5049 ext. 4211.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED

Andrew McGregor, MCIP, RPP
Senior Planner, EA & Approvals

Copied to: Nick Palomba, P.Eng. – R.V. Anderson Associates Ltd.
Connor MacIsaac, EPt. – R.V. Anderson Associates Ltd.
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R:\2021\215632 - Guelph Downtown Infrastructure\07 EA, Planning, Studies\04 Wyndham Street Class EA\02 Phase 1 EA - Problem or Opportunity

1.0 STUDY NEED AND JUSTIFICATION

1.1 Project Background and Study Area

The City of Guelph has initiated a Municipal Class EA (Class EA) for improvements to Wyndham Street from Carden Street to Woolwich Street (intersections included). The study will consider options for the Wyndham Street corridor, including lane reduction from four to two lanes, and the implementation of a traffic circle in St. George's Square.

The study area consists of Wyndham Street North from Carden Street to Woolwich Street (intersections included), a distance of approximately 500m, as illustrated in Figure 1.

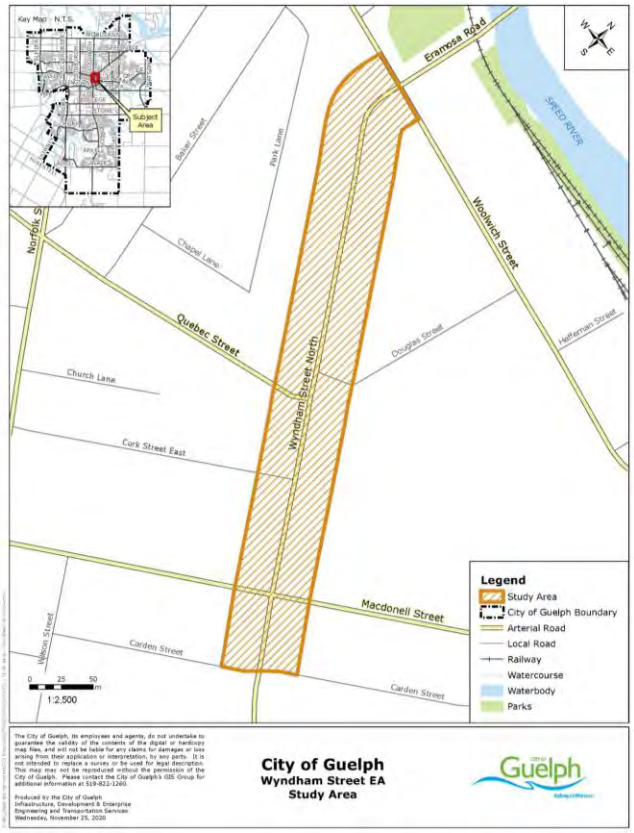

Figure 1 – Wyndham Street Class EA Study Area

The Wyndham Street corridor within the study area is a downtown main street corridor vital to the accessibility, local economy, and placemaking of Downtown Guelph. Furthermore, the Wyndham / Quebec / Douglas intersection offers an opportunity for a public square. As such, this corridor has been a focus of the Downtown Infrastructure Revitalization Program as described below.

1.1.1 Downtown Infrastructure Revitalization Program

Downtown Guelph is filled with aging infrastructure such as water and sewer pipes, roads and sidewalks. As such, the City of Guelph is planning for the replacement of this aging municipal infrastructure throughout the Downtown Core.

In order to minimize disruptions associated with major infrastructure improvements and maximize cost savings, the City has begun the planning phase of the Downtown Infrastructure Revitalization Program. The Downtown Infrastructure Revitalization Program will serve as the overall capital program for the reconstruction and improvement of public infrastructure within the road allowances in Downtown Guelph.

The Study Area for the Downtown Infrastructure Revitalization Program consists of that area designated within the 2014 Downtown Secondary Plan as Downtown Guelph but is limited to that portion north of the Metrolinx railway tracks as illustrated below.

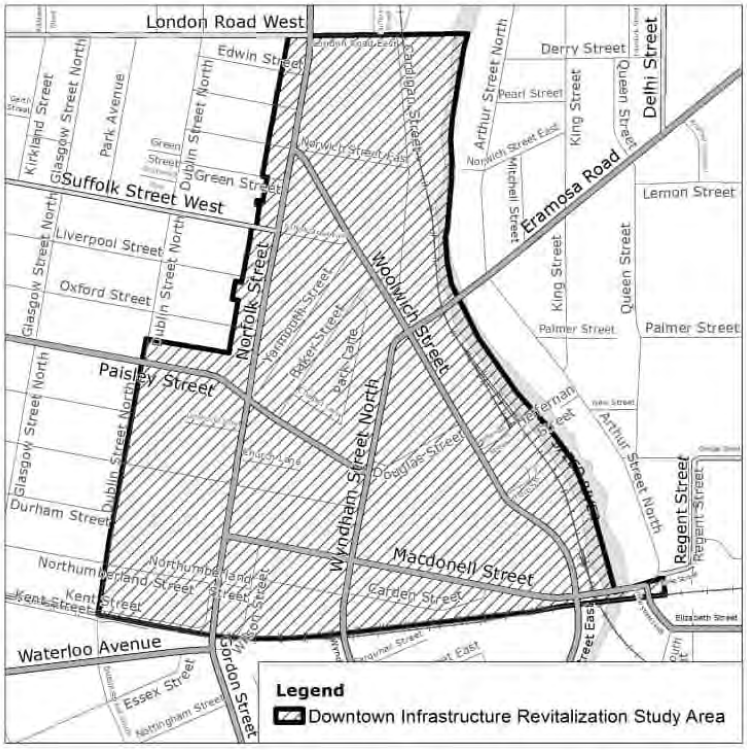

Figure 2 – Downtown Infrastructure Revitalization Program Study Area

The planning phase of the Downtown Infrastructure Revitalization Program includes a Capital Implementation Plan and two Municipal Class Environment Assessments (EAs). The Capital Implementation Plan will consolidate all previous downtown studies, identify gaps and steps needed to address those gaps, and identify phasing and budgetary requirements for required infrastructure improvements in the study area. In addition to the

Wyndham Street EA, the Macdonell and Allan Structure EA will consider options for the Macdonell Street Bridge Area as a whole.

1.2 Road Capacity and Planned Development

The need and justification for the Wyndham Street Municipal Class EA (Wyndham Street EA) was developed out of the road capacity and intersection recommendations identified in the *Downtown Streetscape Manual 2014*, as well as the planned densification and improvements associated with the planned Baker District Redevelopment.

1.2.1 Downtown Streetscape Manual – Operational Improvements

The *Downtown Streetscape Manual*, *2014* identifies opportunities to create streets that provide an attractive, accessible and safe environment for all modes of transportation (pedestrian, cycling, transit and vehicular). As shown in Figure 3, operational improvements identified within the study area include reducing Wyndham Street from four to two lanes to create a flexible street and introducing a traffic circle at the Wyndham / Quebec / Douglas intersection, creating a public square in the St. George's Square area.

Figure 3 – Wyndham Street Reconstruction Recommendations (Downtown Streetscape Manual, 2014)

1.2.2 Baker District Redevelopment

Beginning construction in 2021, the Baker District Development will transform the existing Baker Street municipal parking lot and adjacent properties into a compact district with high density employment, residential development, public infrastructure and services including a library, and multimodal transportation.

The planned population and employment densification and associated development including streets, laneways, and active transportation links, including a new mid-block

street linking Wyndham Street to Baker Street, associated with the Baker District Redevelopment necessitates a review of the Wyndham Street road capacity for all users.

1.2.3 Wyndham Street Municipal Class EA

Based on the Downtown Streetscape Manual recommendations, as well as the planned Baker District Redevelopment, the City wishes to consider a change in road capacity along Wyndham Street. Due to the potential impacts with any changes in road capacity, a Schedule 'B' Municipal Class Environmental Assessment Study (Class EA) is required. The City of Guelph has retained a consulting team lead by R.V. Anderson Associates Limited (RVA), to carry out the Wyndham Street Municipal Class EA on behalf of the City.

1.3 Capital Implementation Plan – Streetscaping and Municipal Infrastructure

In addition to implementing the Wyndham Street Municipal Class EA recommendations on potential changes in road capacity and intersection geometry, the Capital Implementation Plan will consider improvements to municipal infrastructure and streetscaping enhancements. By implementing the required infrastructure improvements and streetscaping enhancements at the same time as any required road capacity changes and intersection improvements, the City will be able to minimize disruptions and maximize cost savings.

This section will provide a summary of the municipal infrastructure improvements and streetscaping enhancements identified in the *Downtown Servicing Study, 2020*, and the *Downtown Streetscape Manual, 2014*, respectively.

1.3.1 Downtown Servicing Study, 2020

In January 2020, Cole Engineering Group Ltd. completed a *Downtown Servicing Study* report to identify water, wastewater and stormwater improvements to accommodate planned development within the City of Guelph's Downtown Secondary Plan as shown in Figure 4.

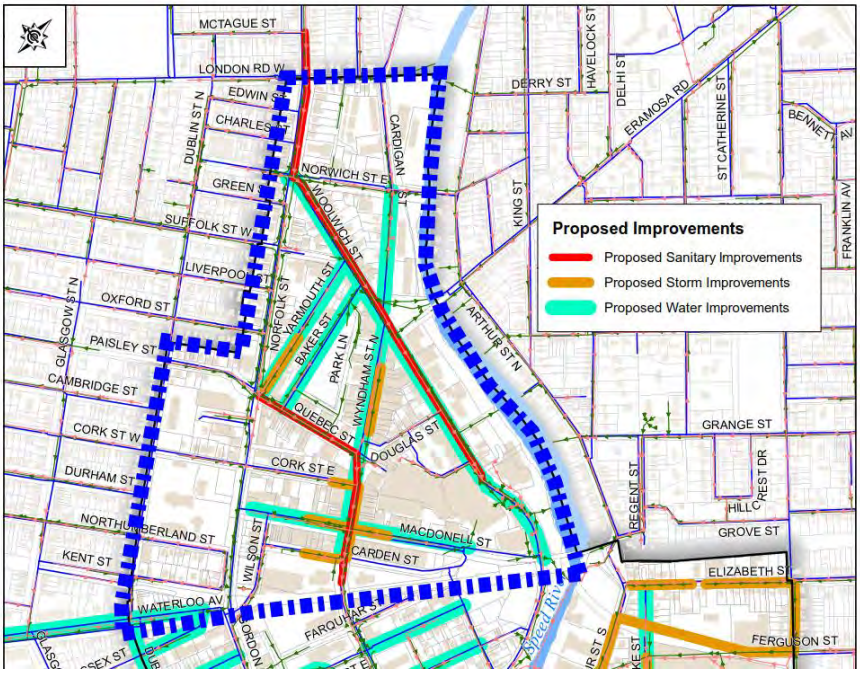

Figure 4 – Infrastructure Improvements (Downtown Servicing Study Report, 2020)

The Downtown Servicing Study Report recommended the following infrastructure improvements, within and/or adjacent to Wyndham Street within the study area:

- Water Projects
  - Project W-1 Woolwich Street Between Norwich Street & Macdonell Street: 950 meters of new 300 mm diameter pipe including through the Wyndham Street & Woolwich Street intersection
  - Project W-3-N Wyndham Street between Woolwich Street & Quebec Street: 245 meters of new 300mm diameter pipe
  - Project W-3-S Wyndham Street Between Quebec Street & Carden Street: 245 meters of new 300mm diameter pipe
  - Project W-4 Macdonnel Street between Norfolk Street & Carden Street: 450 meters of new 200mm diameter pipe including through the Wyndham Street & Macdonell Street intersection
- Wastewater
  - Project SAN-1 Norfolk / Woolwich Street: 950 meters of new 300mm diameter pipe including through the Wyndham Street & Woolwich Street intersection
  - 9oincluding through the Wyndham Street & Macdonell Street intersection
- Stormwater
  - ST -1 Wyndham Street Between Woolwich Street & Quebec Street: 133 meters of new 525 mm diameter storm sewer

- ST-2 Wyndham Street Between Cork Street & Carden Street: 144 meters of new 1350 mm diameter storm sewer pipe
- ST -4 Macdonell Street Storm S

The Capital Implementation Plan will identify any gaps in these recommended improvements to municipal infrastructure along Wyndham Street, and steps needed to address those gaps.

1.3.2 Downtown Streetscape Manual, 2014

Within the study area, the *Downtown Streetscape Manual*, *2014* recommends transforming Wyndham Street into a flexible street, with streetscape enhancements including on-street parking on both ides of the road, and 6-meter-wide boulevards including marketing zones, pedestrian clearway, plantings and street furnishings.

The recommended streetscaping features identified in the Downtown Streetscape Manual will be reviewed, updated, and revised in consultation with City staff as part of the Capital Implementation Plan.

1.3.3 2021 to 2030 City Capital Budget

The City of Guelph 2021 to 2030 City Capital Budget includes $263.17M in funding for capital improvements through 10 years, from 2021, up to 2030. Included in this budget are road, infrastructure and streetscaping improvements to Wyndham Street North between Carden Street and Woolwich Street in the following phases:

- PN0060 Wyndham Street – Phase 1 – Carden Street to Macdonell Street
- PN0850 Wyndham Street – Phase 2 - Macdonell Street to Cork Street
- PN0061 Wyndham Street – Phase 3 - Cork Street to Douglas Street
- PN0062 Wyndham Street – Phase 4 - Douglas Street to Woolwich Street

The Capital Implementation Plan will provide a comprehensive roadmap to implement the required road, infrastructure, and streetscaping improvements within the Downtown Infrastructure Revitalization Program, including the Wyndham Street Class EA Study Area, informing the City's capital budget moving forward.

2.0 MUNICIPAL CLASS EA PROCESS

This study is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B', which is an approved process under the Environmental Assessment Act.

Figure 5 illustrates the framework for the Class EA process which is a legislated planning process comprising of up to five phases with mandatory points of public contact. The focus of the framework is a comprehensive and transparent decision-making process.

The Class EA is broken down into phases, as follows:

- Phase 1 – Identify problem or opportunity;
- Phase 2 – Identify alternative solutions, evaluate and select the preferred solution;
- Phase 3 – Identify alternative design concepts, evaluate and select the preferred design concepts;
- Phase 4 – Complete the Environmental Study Report (ESR) and place it on the public record; and,
- Phase 5 – Project implementation, which is to undertake the contract drawings and tender documents for the project and proceed to construction and operation of the project.

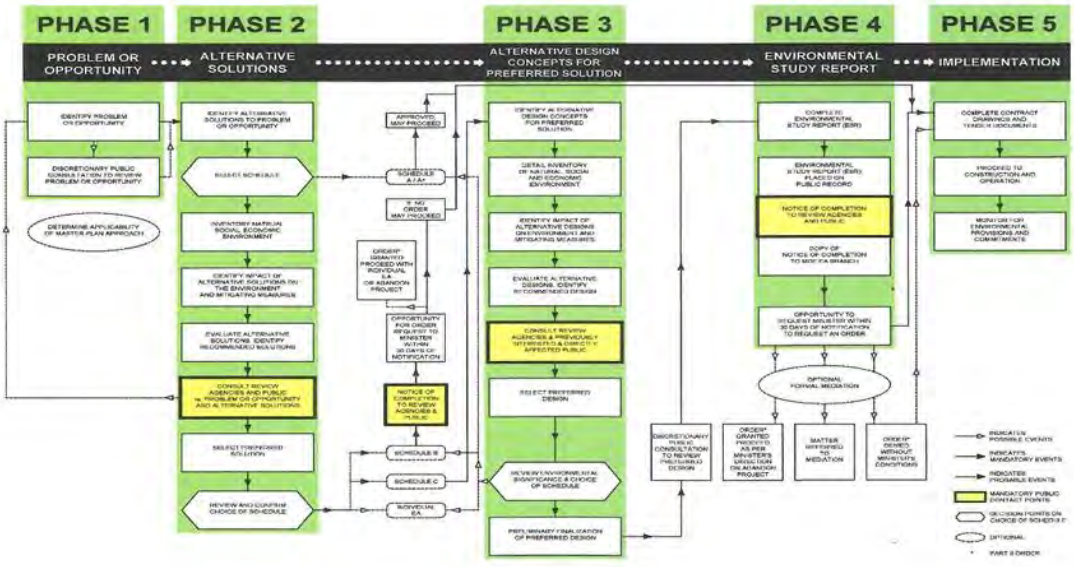

Figure 5 – Municipal Class Environmental Assessment Process (Municipal Engineers Association, 2015)

This Schedule 'B' study requires the completion of Phases 1 and 2 of the Municipal Class Environmental Assessment process, with the final deliverable comprising the

documentation of the planning process in a Project File Report. The Project will then proceed to Phase 5.

3.0 PROBLEM AND OPPORTUNITY STATEMENT

Per Phase 1 requirements of the Municipal Class Environmental Assessment process for a Schedule 'B' project, a "Problem and Opportunity Statement" was prepared to identify in detail the various problems and opportunities to be addressed throughout the study. In essence, the Problem Statement outlines the need and justification for the overall project and establishes the general parameters, or scope, of the study.

3.1 Wyndham Street EA Problem and Opportunity Statement

The scope of the Wyndham Street EA will be limited to potential capacity changes and intersection improvements from Carden Street to Woolwich Street. As such, the Study Problem and Opportunity Statement developed for the project is comprised of the following key elements:

- Enhance road safety, operations, and connectivity for all users including vehicles, pedestrians, cyclists, and transit; and
- Improve the St. Georges Square at the Wyndham/Quebec/Douglas intersection geometrics and operations in order to enhance traffic operations and safety for all users.

The City's Downtown Infrastructure Revitalization Program will implement the Wyndham Street Municipal Class EA recommendations regarding capacity changes and intersection improvements, as well recommendations to upgrade municipal infrastructure (watermain, storm and sanitary sewer) as identified by the Downtown Capital Implementation Plan, and the streetscape recommendations identified in the Streetscape and Lifecycle Cost Report. Together, the recommendations developed within each of the studies will serve to provide quality service to, and support planned growth of, the downtown core.

3.2 Confirmation of the Problem and Opportunity Statement

The Problem and Opportunity Statement will be confirmed following the assessment of the existing conditions within the study area, along with discussions with City staff regarding infrastructure needs; and through consultation with the public and technical agencies undertaken throughout the study.

3.3 Alternative Solutions to Address the Problem and Opportunity Statement

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity statement will be identified and evaluated, including the "Do Nothing" alternative.

ATTACHMENT 3

Short List Evaluation

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TECHNICAL MEMORANDUM

To: Mr. Andrew Miller **RVA:** 215632.01

From: Andrew McGregor, MCIP, RPP - Senior Planner, EA & Approvals

Date: March 9, 2023

Subject: Wyndham Street Schedule B Municipal Class Environmental Assessment – Short List Technical Memorandum – Final

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EXECUTIVE SUMMARY

This technical memorandum is provided to review the short list of alternative solutions recommended to be carried forward for further evaluation for Phase 2 of the Wyndham Street Class EA. The recommendations were developed in consideration of input from City staff, members of the public and Downtown business community, as well as a review of City policies and goals and include:

- Wyndham Street Cross-Section Recommended Short List
  - Option 1 - Do Nothing
  - Option 2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street
  - Option 2 c) (i) – Two-lanes with Uni-Directional Bike Path
  - Option 2 c) (ii) – Two-lanes with Bi-Directional Bike Path
- Wyndham / Quebec / Douglas / Intersection & St. George's Square Recommended Short List
  - Option 1 – Do Nothing
  - Option 2 – Standard Intersection Improvements
  - Option 3 – Realigned Four-leg Intersection
  - Option 5 – Traffic Circle

Following approval of the recommended short list, the project team will move forward with evaluation of the short-listed options, to identify a preliminary recommended solution.

1.0 BACKGROUND

The City of Guelph is undertaking a Municipal Class Environmental Assessment (Class EA) for improvements to Wyndham Street North from Carden Street to Woolwich Street (intersections included). The study will consider options for the Wyndham Street corridor cross-section as well as the configuration of the Wyndham / Quebec / Douglas / Intersection & St. George's Square. This study is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B'.

The previous iteration of this memo distributed to City staff, containing the initially recommended short-list, is provided in Appendix 1, while a summary of the workshop is provided in Appendix 2. It is noted that the information in this memo, including Tables 2.1 and 3.1, have been revised based on discussion with City staff at the workshop as described in Appendix 2.

2.0 POLICY VISION FOR WYNDHAM STREET AND ST. GEORGE'S SQUARE

As planned development in the City of Guelph's Downtown continues, the need to reconstruct Wyndham Street has been considered in several documents including the Downtown Secondary Plan (2012) / Consolidated Official Plan (2018), 2014 Streetscape Manual (2014), and the Transportation Master Plan (2022). These studies considered not only the measures required to address the long-term transportation requirements of Wyndham Street, but also the function of the main street at the heart of the Downtown core, as described below.

2.1 Downtown Secondary Plan (2012) / Consolidated Official Plan (2018)

Within the City's Downtown Secondary Plan (2012), and the City's Consolidated Official Plan (2018), Wyndham Street is classified as a Downtown Main Streets, which should be considered "pedestrian and transit priority streets" and have the following characteristics:

- The zones for pedestrians on these streets should be a minimum of six metres wide on both sides, where possible;
- On-street parking should be permitted north of Carden Street to support local business and provide a buffer between pedestrians and moving traffic; and
- Dedicated bike facilities should be accommodated where necessary based on the function of the roadway.

2.2 2014 Streetscape Manual (2014)

Building on the 2012 Downtown Secondary Plan, the 2014 Streetscape Manual focuses on the function of Wyndham Street as a public space, and seeks to give equal prioritization to all modes of transportation to provide wide boulevards, on- street parking and shared travel lanes with no curbs. The manual also includes the redesign of St. George's Square as a central gathering square with a traffic circle around the periphery.

2.3 Transportation Master Plan Update (2022)

Completed in 2022, Guelph's 2022 Transportation Master Plan (TMP) update, lays out how residents and visitors will move through the city over the next three decades. The TMP classifies Wyndham Street North within the study area as a Downtown Main Street, and recommends the following improvements within the study area:

- On-Street Spine Cycling Network (off-road protected facility - all ages and abilities);
- Quality Transit Network-potential Lane conversion of existing travel lanes; and
- Pedestrian Priority Network: wide sidewalks and high-quality walking environments

No recommendations are explicitly stated for St. George's Square, however, the recommendations discussed above are recommended to be carried through the Wyndham / Douglas / Quebec Streets intersection.

2.3.1 Additional Ongoing Relevant Planning Documents

Furthermore, it is understood that the Downtown Parking Master Plan and Solid Waste Master Plan are currently underway and will set out additional requirements for the Wyndham Street corridor right-of-way.

2.4 Public and DGBA

2.4.1 Feedback from the Public

During the first Open House and associated online engagement, as well as during three public engagement pop-up events held in Summer 2022, the public was asked to provide their input on goals for Wyndham Street that should be considered for the study. A summary of their responses is provided below.

- A pleasant streetscape and atmosphere, more green spaces and trees
- Increased safety for all road users, including those who walk and bike, aligning with the City's modal split goal

- Making downtown more pedestrian-friendly and family-friendly
- Considerations for accessibility and universal design
- Maintaining parking for individuals with accessibility concerns
- Dedicated loading zones for businesses
- Compassionate response for those experiencing homelessness and mental health challenges
- Reduce negative impacts on the environment; consider climate change mitigation and adaptation
- Consider connections within and outside of the downtown core
- Retaining the "village" or "small-town" feel of downtown; ensure downtown is a "destination"
- Consider the impact of winter weather in design
- Consideration of the needs/input of businesses in the process
- Addressing local crime

2.4.2 Feedback from DGBA

The project team has held two meetings with the Downtown Guelph Business Association (DGBA) Executive to gather feedback on the function of Wyndham Street. A summary of their input is provided below.

- Desire for this project to improve and enhance the economic vitality of Downtown Guelph
- Importance of downtown as a commercial district, which addresses the needs of the business community
- Importance of placemaking; solutions for the downtown need to create a feeling of destination

It is noted that there has been significant turnover in the DGBA executive since these meetings were held.

2.5 Summary

The vision for Wyndham Street as set out by these key City planning documents, as well as the public and DGBA engagement completed as part of the Downtown Renewal project to date, are summarized in the table below. Key aspects of the street cross-section including Parking, Cyclists, Transit, Number Travel Lanes, Pedestrian Realm, Public Realm, Flexibility, Street Trees, and Vehicle Speeds are considered.

Table 2.1 – Wyndham Street Vision

Planning Document	Downtown Secondary Plan (2012)	Streetscape Manual (2014)	Transportation Master Plan (2022)	Public Outreach – Downtown Renewal (2022)
Parking	• Both sides of the street	• Angled parking on the west side of the street and parallel parking on the east	• Recommends aligning parking strategy (supply) with mode share and GHG targets. Refers to updating the Downtown Parking Master Plan (underway, no recommendations)	• Mixed support for parking • Desire for parking for individuals with accessibility needs
Cyclists	• Dedicated Cyclist Facility (1.5-meter-wide on-street bicycle lanes)	• Cyclists and traffic vehicles share the traveled portion of the road. Intent is to slow traffic so that cyclists and vehicles will be moving at similar speeds	• On-Street Spine Cycling Network (off-road protected facility to accommodate all ages and abilities)	• Strong support for cyclist facilities (emphasis on safety)
Transit	• Transit priority street (signal priority and queue-jumping lanes)	• Provide transit service but recognizing impact to transit from slowing vehicles	• Quality Transit Network-potential lane conversion of existing travel lanes	• Desire for transit to be accommodated in design
Travel Lanes	• Two (no width specified)	• Two 3.5-meter-wide travel lanes	• 4 lanes with conversion of existing lanes for transit	• Strong support for two lanes
Pedestrian Realm	• 6 meters per side • Create an environment that encourages walking everywhere Downtown	• 5.8-meter-wide boulevard space on west side, and 8.2 meter-wide boulevard space on east side including 2-meter-wide pedestrian clearway and 2-meter-wide planting + furnishing zones on each side	• Pedestrian Priority Network: wide sidewalks and high-quality walking environments	• Desire for safe, attractive environment for pedestrians
Public Realm / Flexibility	• Primary Streetscape (additional boulevard space to accommodate restaurant patios and a clear area for pedestrians, trees, planters and street furnishings) • St. George's Square redesigned as a central gathering place with transit hub	• Focus on pedestrian realm and placemaking of Downtown • Places all users and elements of the street at the same elevation (i.e. no curbs), allowing for unrestricted movement between roadway and boulevard zones	• Classified as Downtown Main Street (subject to recommended Complete Streets Design Guide)	• Strong support for flexibility & balance of uses • Vibrancy and attractiveness of downtown • Provision for public space, green space • Access to businesses is important
Street Trees	• Primary Streetscape lined with consistently spaced trees 6-8 metres apart via soil cells	• Closed tree pits with tree grates and continuous soil trenches utilizing soil cells and permeable paving	• Enhance the public realm with street trees and other amenities to encourage a sense of community	• Desire for street trees
Vehicle Speeds	• Discourage fast-moving vehicular traffic Downtown	• Intentionally slow vehicles to 30 km/h operating speeds	• Classified as Downtown Main Street with no explicit recommended speed limit	• Some desire for traffic calming or fewer cars altogether

3.0 WYNDHAM STREET CROSS-SECTION

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity statement will be considered, including the "Do Nothing" alternative. The sections below document the long list of alternative solutions considered, and preliminary recommendations for the short for the Wyndham Street North cross-section.

The long list of options summarized below were presented for input to the public at the first Public Open House held November 2, 2022, and were distributed to City staff for review within the Alternative Solutions Preliminary Technical Memorandum (April 19, 2022). Please refer to these documents for further information on the alternative options, as required.

3.1 Wyndham Street Cross-Section Long List Options

The cross-section alternatives focus on the number of traffic lanes, and order of cyclist facilities, as these items are expected to be the main differentiator and will dictate the space available within the rest of the ROW for parking, flexible use, marketing, and planting / furnishing zones.

Several alternative parking, flex use, and planting / furnishing zone configurations can be developed within each alternative cross-section listed below. 2-meter-wide pedestrian clearways are provided within all alternative solutions. Preliminary renderings have been developed for a number of the potential cross-sections for discussion purposes.

1) Do Nothing: The Wyndham corridor would remain as is, with no improvements undertaken. This alternative is required to be considered under the Municipal Class EA planning process as a baseline for the comparison of alternative solutions.

Exhibit 3-1: 4-lane (Do Nothing) Cross-Section

2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street* (Added following PIC #1): Recommended by the 2014 Streetscape Manual. one lane of traffic in each direction (3.5 meters wide) is shared by vehicles, cyclists, and transit. Angled parking on the west side of the street and parallel parking on the east. Curbless flexible use zones are provided on both sides of the street, with a larger marketing zone on east side of the road.

Exhibit 3-2: 2-Lane with Shared Use Lanes and Angled Parking (Source: City of Guelph Downtown Streetscape Manual & Built Form Standards, 2014)

2 a) (ii) – Two-lanes with Shared Use and Parallel Parking: One lane of traffic in each direction (3.5 meters wide) is shared by vehicles, cyclists, and transit. 3.15-meter-wide marketing zones, 2.9-meter-wide planting / furnishing zones, and parking / flexible use zones are provided on both sides of the street.

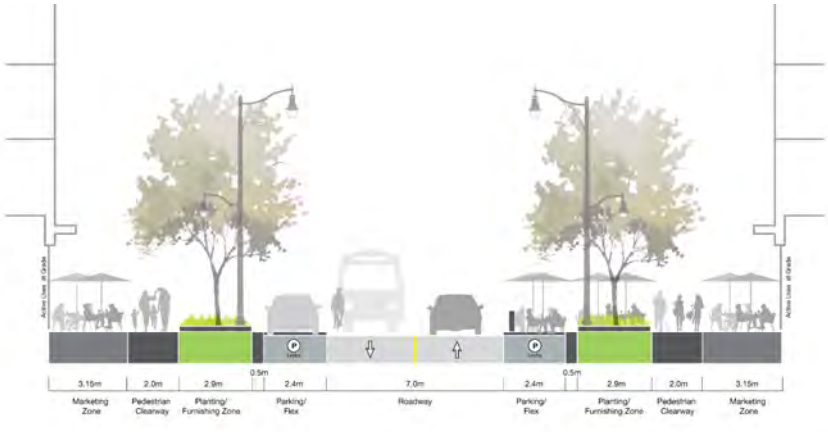

Exhibit 3-3: 2-Lane with Shared Use Lanes and Parallel Parking

2 b) – Two-lanes with Buffered Bike Lanes: One lane of traffic in each direction (3.5 meters wide) and 1.8-meter-wide bicycle lanes and 0.5-meter-wide painted buffers are installed on both sides. Cyclists are accommodated via bicycle lanes, but still share the roadway with

vehicles as there is no physical barrier separating cyclists and vehicles. Parking / flex zone and, with marketing and planting / furnishing zones can be accommodated on both sides of the street.

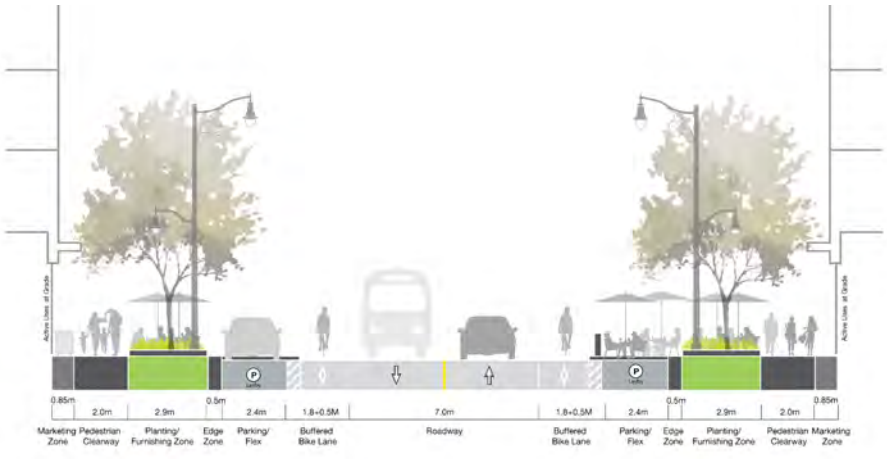

Exhibit 3-4 – 2-Lane Configuration with Buffered Bike Lanes

2 c) (i) – Two-lanes with Uni-Directional Bike Path: One lane of traffic in each direction (3.5 meters wide) and 1.8-meter-wide cycle tracks are installed on both sides of the road. Parking is provided on both sides of the road, with no flexible use zone, unless the parking lane is utilized for the bike path as shown in Exhibit 3-6.

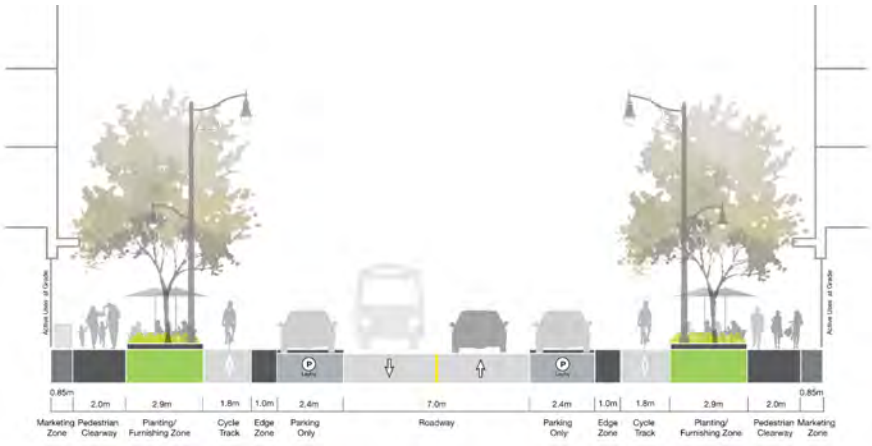

Exhibit 3-5: 2-Lane Configuration with Uni-Directional Cycle Track and Flex on One Side of Street

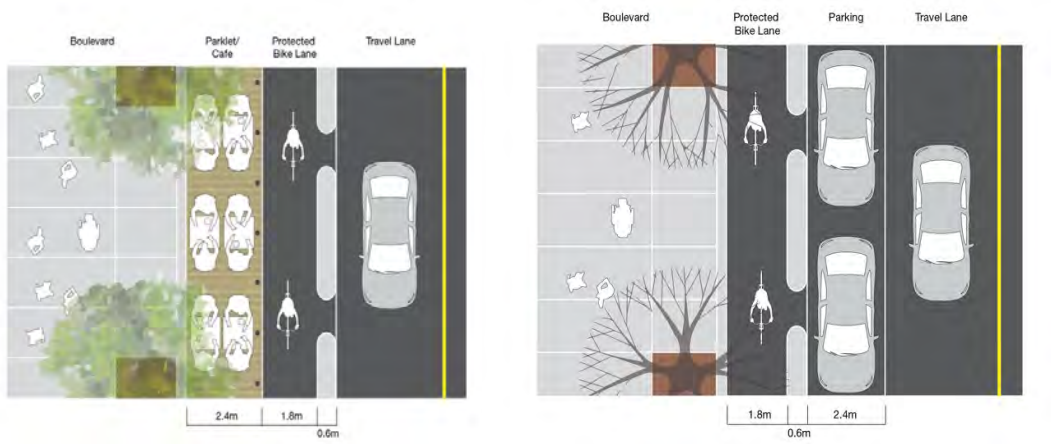

Exhibit 3-6: Seasonal Configuration of Bike Path in Parking Lane

2 c) (ii) – Two-lanes with Bi-Directional Bike Path: One lane of traffic in each direction (3.5 meters wide) and 3-meter-wide bi-directional cycle track is installed on one side of the road. Parking, marketing and planting / furnishing zones can be accommodated on both sides of the street, with flex use zone available on one side of the street, opposite the cycle track.

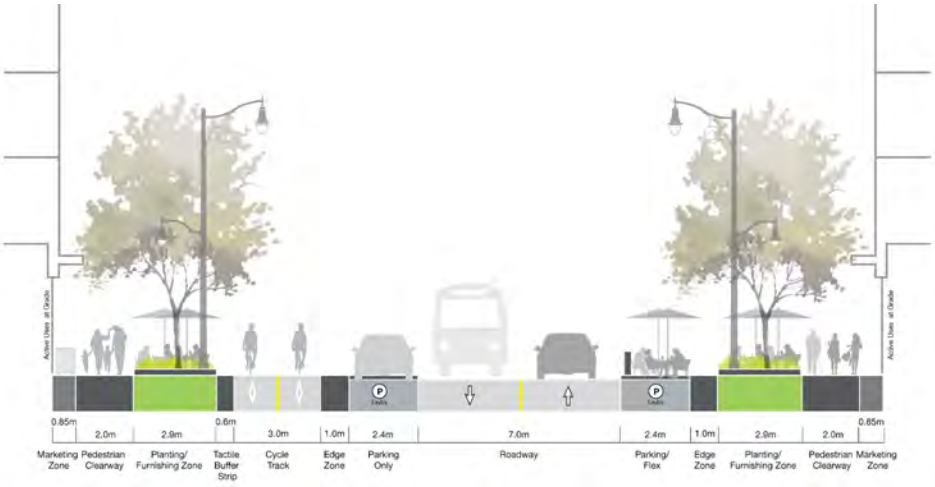

Exhibit 3-7: 2-Lane Configuration with Bi-Directional Cycle Track and Flex on One Side of Street

3. Four-lanes with Bike Path: As recommended in the City of Guelph Transportation Master Plan Update, one general purpose lane of traffic in each direction (3.5 meters wide) and one lane of traffic in each direction dedicated for transit vehicles, either at different times of day or all-day (3.5 meters wide). Dedicated cyclist facilities (i.e., cycle track or buffered bike lane) would be provided as part of the core Spine Cycling network. Marketing, planting / furnishing, and parking / flex use zones minimized.

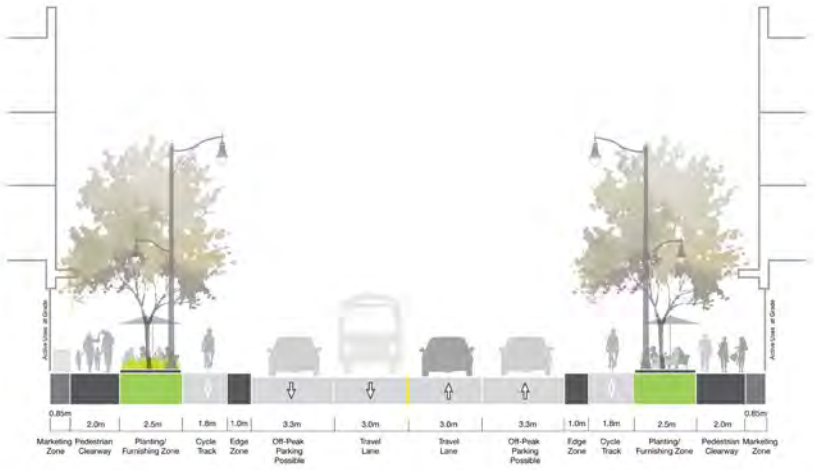

Exhibit 3-8: 4-Lane Configuration with Uni-Directional Cycle Track

4 – Public Space (no vehicle lanes): Street is reserved for pedestrian-only use (no lanes for vehicles or cyclists). Large areas for flexible uses.

Exhibit 3-9: Public Space (no vehicle lanes)

3.2 Wyndham Street Cross-Section Recommended Short-List

The table below summarizes how each option described above aligns with the policy documents completed by the City and discussed in Table 2.1. The table has been revised based on staff input gained through the long list to short-list workshop.

Table 3.1 - Preliminary Review of Long Listed Options (Wyndham Street Cross-Section)

	1 - Do Nothing	2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street	2 a) (ii) – Two-lanes with Shared Use and Parallel Parking	2 b) – Two-lanes with Buffered Bike Lanes	2 c) (i) – Two-lanes with Uni-Directional Bike Path	2 c) (ii) – Two-lanes with Bi-Directional Bike Path	3 – Four-lanes with Bike Path	4 – Public Space (no vehicle lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Does not align with TMP Goals.	Does not align with TMP Goals.	Somewhat aligns with TMP Goals.	Mostly aligns with TMP Goals.	Mostly aligns with TMP Goals.	Fully aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6-meter pedestrian realm and dedicated cyclist facility)	Does not align with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Fully aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Does not SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	Provides full flexibility.	Provides full flexibility.	Provides improved flexibility.	Provides improved flexibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides full flexibility.
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Not desired by public.	Not desired by public.	Some public support.	Desired by public.	Desired by public.	Not desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Not Recommended to be Carried Forward

3.2.1 Recommended Short List

It is clear that none of the options will fully achieve the diverse range of goals set out by the City's policy documents, the public, and the Downtown Businesses. As noted in the City's Official Plan, "the City will balance the provision of a safe, functional and attractive pedestrian-oriented environment with an acceptable level of vehicular traffic… the City will also balance the need for, where appropriate, bicycle facilities, loading facilities, transit priority measures, on-street parking and other infrastructure needs, including street trees. These issues will be considered in a holistic manner to create a final design which is sensitive to the urban context of Downtown and the street classification."

Table 3.2 summarizes the options to be moved forward for further evaluation, in consideration of input from City staff, as well as a summary of the original recommended short-list discussed at the workshop as described in Appendix 2.. The recommended short-listed options range from shared-use lanes to fully separated cyclist facilities.

Table 3.2 - Original vs. Revised Recommendation (Wyndham Street Cross-Section)

Option	Original Recommendation	Revised Recommendation
1 - Do Nothing	Required to be carried forward	Required to be carried forward
2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street	Not recommended to be carried forward	Recommended to be carried forward
2 a) (ii) – Two-lanes with Shared Use and Parallel Parking	Recommended to be carried forward	Not recommended to be carried forward
2 b) – Two-lanes with Buffered Bike Lanes	Recommended to be carried forward	Not recommended to be carried forward
2 c) (i) – Two-lanes with Uni-Directional Bike Path	Recommended to be carried forward	Recommended to be carried forward
2 c) (ii) – Two-lanes with Bi-Directional Bike Path	Recommended to be carried forward	Recommended to be carried forward
3 – Four-lanes with Bike Path	Not recommended to be carried forward	Not recommended to be carried forward
4 – Public Space (no vehicle lanes)	Not recommended to be carried forward	Not recommended to be carried forward

4.0 WYNDHAM / QUEBEC / DOUGLAS INTERSECTION AND ST. GEORGE'S SQUARE CONFIGURATION

4.1 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Long List Options

The long list of options summarized below were presented for input to the public at the first Public Open House held November 2, 2022, and were distributed to City staff for review within the Alternative Solutions Preliminary Technical Memorandum (April 19, 2022).

Option 1: Do Nothing – The Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration would remain as is, with no improvements undertaken.

Exhibit 4-1: Do Nothing

Option 2: Standard Intersection Improvements – Operational improvements (i.e., left turn lanes, signage, pavement markings, curb radii etc.) to the intersection are undertaken to improve vehicle and pedestrian operations, with upgrades to St. George's Square in its current configuration. The intersection remains signalized, and St. George's Square remains on the fragmented along the periphery of the intersection.

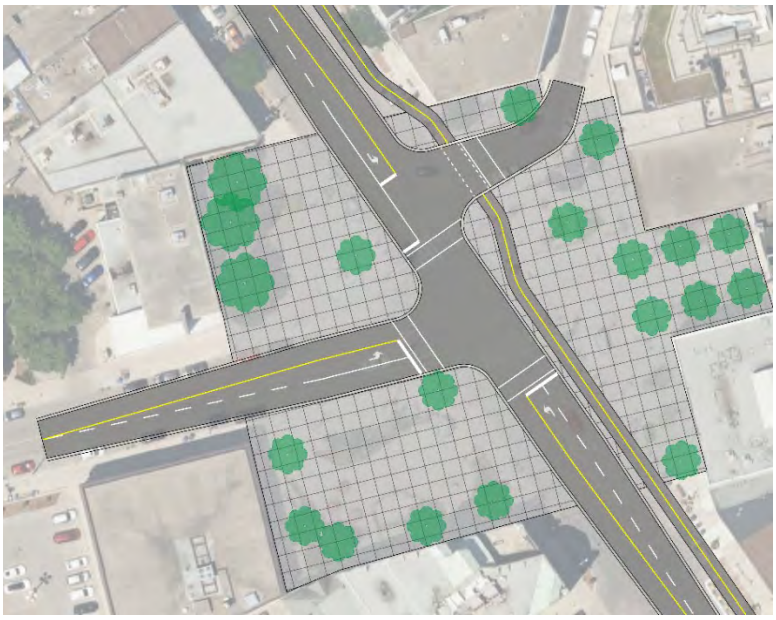

Exhibit 4-2: Standard Intersection Improvements

Option 3: Realigned Four-leg Intersection – Realign Quebec Street and Douglas Street to tie into Wyndham Street at a standard four-leg intersection. Minor reconfiguration of St. George's Square to make room for new intersection alignment. Can provide flexibility for events when intersection is closed,

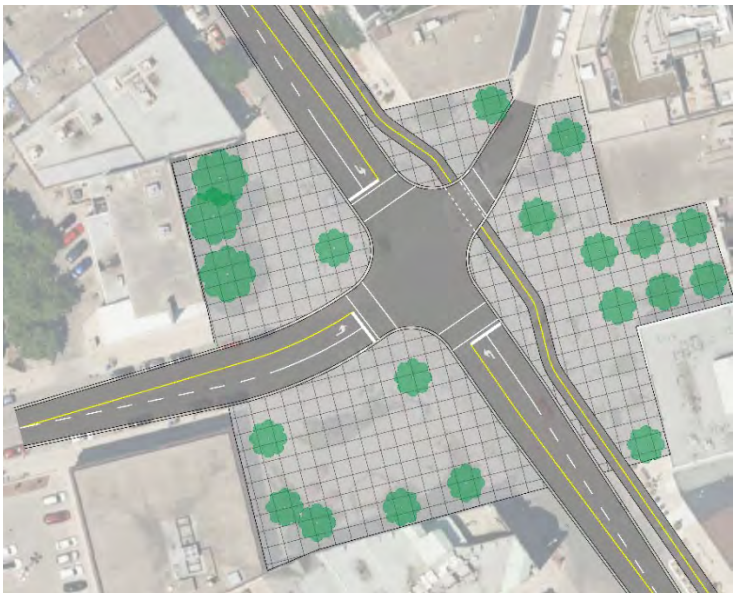

Exhibit 4-3: Realigned Four-leg Intersection

Option 4: Roundabout – Realign Quebec Street and Douglas Street to tie into Wyndham Street as a standard roundabout. Some reconfiguration of St. George's Square to make room for new intersection layout. Can provide flexibility for events when intersection is closed

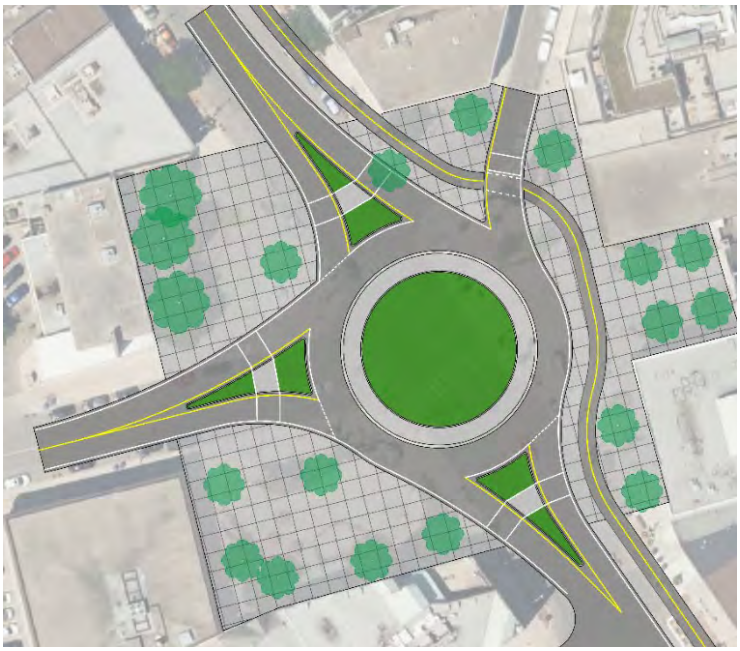

Exhibit 4-4: Roundabout Intersection

Option 5: Traffic Circle – As recommended in the 2014 Streetscape Manual, the Wyndham Street / Quebec Street and Douglas Street intersection is reconstructed to create a one-way continuously flowing roundabout, with St. George's Square reinstated as a central plaza. On-street parking is provided at select locations along the periphery of the roundabout.

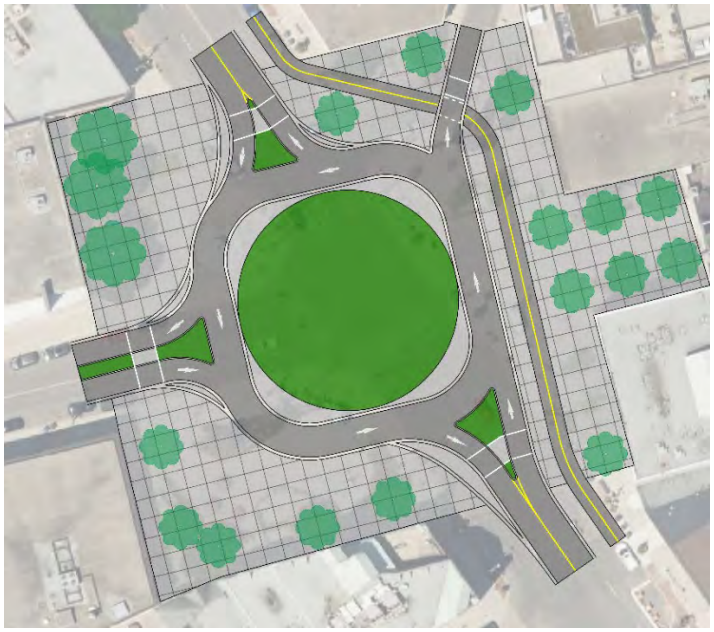

Exhibit 4-5: Traffic Circle Intersection

Option 6: Public Space (No Vehicle Lanes) – Intersection is closed to vehicles and reserved for pedestrian-only use with no formal accommodation of cyclists. Closure of Quebec Street, Douglas Street and Wyndham Street prior to intersection.

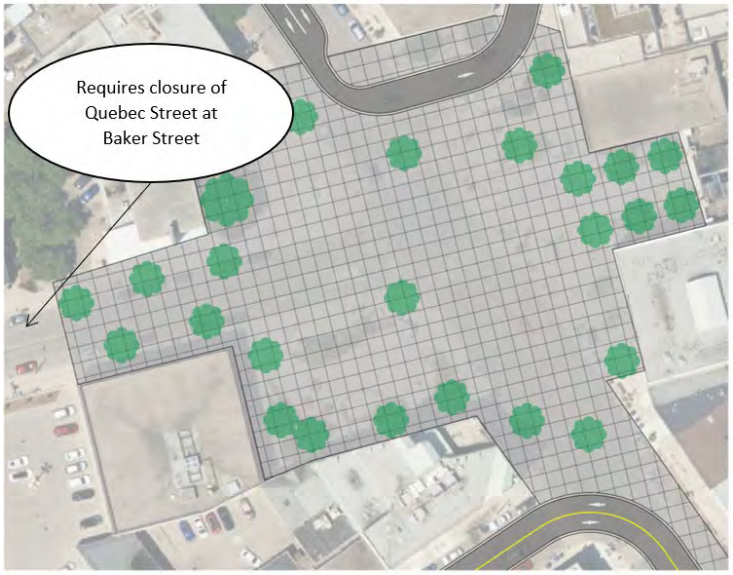

Exhibit 4-6: Public Space Intersection

4.2 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Preliminary Recommended Short-List (For Discussion)

The table below summarizes how each option described above aligns with the policy documents completed by the City and discussed in Table 2.1.

Table 4.1 - Preliminary Review of Long Listed Options (St. George's Square)

	1 - Do Nothing	2 – Standard Intersection Improvements	3 – Realigned Four-leg Intersection	4 – Roundabout	5 – Traffic Circle	6 – Public Space (No Vehicle Lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Somewhat aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6-meter pedestrian realm and dedicated cyclist facility, central gathering space)	Does not align with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Provides improved flexibility.
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Some public support.	Some public support.	Not desired by public.	Desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward

4.3 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Preliminary Recommended Short-List (For Discussion)

Similar to the options developed for the Wyndham Street cross-section, none of the options for the Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration fully achieve the diverse range of goals set out by the City's policy documents, the public, and the Downtown Businesses. As noted in the City's Official Plan "the City will balance the provision of a safe, functional and attractive pedestrian-oriented environment with an acceptable level of vehicular traffic… the City will also balance the need for, where appropriate, bicycle facilities, loading facilities, transit priority measures, on-street parking and other infrastructure needs, including street trees. These issues will be considered in a holistic manner to create a final design which is sensitive to the urban context of Downtown and the street classification."

Table 4.2 - Original vs. Revised Recommendation (Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration)Table 4.2 summarizes the options to be moved forward for further evaluation, in consideration of input from City staff, as well as a summary of the original recommended short-list discussed at the workshop as described in Appendix 2.

Table 4.2 - Original vs. Revised Recommendation (Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration)

Option	Original Recommendation	Updated Recommendation
1 - Do Nothing	Required to be carried forward	Required to be carried forward
2 – Standard Intersection Improvements	Recommended to be carried forward	Recommended to be carried forward
3 – Realigned Four-leg Intersection	Recommended to be carried forward	Recommended to be carried forward
4 – Roundabout	Not recommended to be carried forward	Not recommended to be carried forward
5 – Traffic Circle	Recommended to be carried forward	Recommended to be carried forward
6 – Public Space (No Vehicle Lanes)	Not recommended to be carried forward	Not recommended to be carried forward

5.0 EVALUATION OF SHORT-LISTED OPTIONS

Following approval of the recommended short-list as set out in this memo by the City, the project team will move forward with evaluation of the short-listed options, to identify a preliminary recommended solution.

The evaluation of alternative solutions will be completed based on criteria that represent the broad definition of the environment as described in the EA Act. The general evaluation criteria to be used in evaluating the alternative solutions are outlined in Table 5.1. The criteria to be considered for each of the categories are described in detail in the in the Alternative Solutions Preliminary Technical Memorandum.

The project team will comparatively rank each alternative solution from least desirable to most desirable, for each of the criteria described above, to determine the preliminary preferred solution(s).

Table 5.1 - Evaluation Criteria

Evaluation Criteria	Description of Evaluation Criteria
Traffic Operations & Technical	How will the alternative serve the existing and future vehicular, pedestrian and cycling traffic needs? Does the solution allow the City to upgrade municipal infrastructure?
Socio-Economic Environment	What impacts will the alternative have on the local community?
Natural Environment and Climate Change	How does the alternative affect existing vegetation, water quality, fisheries/wildlife and habitat? Does the alternative address climate change?
Cultural Heritage / Archaeological	Will the alternative affect archaeological, cultural heritage resources or Indigenous communities?
Financial	What is the capital cost of the alternative? What is the cost for utility relocations and property acquisitions? What are the operation and maintenance costs?

The evaluation of the short-listed options, including the preliminary recommendation(s) will be presented to the Downtown Guelph Businesses, followed by the public, at the Second Public Open House. The input received from the business stakeholders and members of the public will help to confirm the preliminary preferred solution.

APPENDIX 1

LONG-LIST TO SHORT-LIST WORKSHOP TECH MEMO AND MATERIALS

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TECHNICAL MEMORANDUM

To: Mr. David Di Pietro **RVA:** 215632.01

From: Andrew McGregor, MCIP, RPP - Senior Planner, EA & Approvals

Date: February 13, 2023

Subject: Wyndham Street Schedule B Municipal Class Environmental Assessment – Long List to Short List Workshop Technical Memorandum

1.0 BACKGROUND

The City of Guelph is undertaking a Municipal Class Environmental Assessment (Class EA) for improvements to Wyndham Street North from Carden Street to Woolwich Street (intersections included). The study will consider options for the Wyndham Street corridor cross-section as well as the configuration of the Wyndham / Quebec / Douglas / Intersection & St. George's Square. This study is being conducted in accordance with the requirements of the Municipal Class Environmental Assessment (MCEA) – Schedule 'B'.

This technical memorandum is provided to review the Phase 2 Class EA long list of alternative solutions, and provide preliminary recommendations of a short list of a maximum of 4 options (not including Do Nothing) for a robust evaluation, for the Wyndham Street Corridor as well as the configuration of the Wyndham / Quebec / Douglas Street intersection and St. George's Square. The preliminary recommended short list outlined in this memorandum will be discussed with City staff at the workshop scheduled on Thursday February 23, 2023 from 10:00 a.m. to 12 noon, in Meeting Room C at Guelph City Hall. As such, it is critical that City staff review the technical memorandum, as well as the display boards in Appendix 1, prior to the workshop.

Following input from the City staff, the project team will move forward with evaluation of the short-listed options, to identify a preliminary recommended solution.

2.0 POLICY VISION FOR WYNDHAM STREET AND ST. GEORGE'S SQUARE

As planned development in the City of Guelph's Downtown continues, the need to reconstruct Wyndham Street has been considered in several documents including the Downtown Secondary Plan (2012) / Consolidated Official Plan (2018), 2014 Streetscape Manual (2014), and the Transportation Master Plan (2022). These studies considered not only the measures required to address the long-term transportation requirements of Wyndham Street, but also the function of the main street at the heart of the Downtown core, as described below.

2.1 Downtown Secondary Plan (2012) / Consolidated Official Plan (2018)

Within the City's Downtown Secondary Plan (2012), and the City's Consolidated Official Plan (2018), Wyndham Street is classified as a Downtown Main Streets, which should be considered "pedestrian and transit priority streets" and have the following characteristics:

- The zones for pedestrians on these streets should be a minimum of six metres wide on both sides, where possible;
- On-street parking should be permitted north of Carden Street to support local business and provide a buffer between pedestrians and moving traffic; and
- Dedicated bike facilities should be accommodated where necessary based on the function of the roadway.

2.2 2014 Streetscape Manual (2014)

Building on the 2012 Downtown Secondary Plan, the 2014 Streetscape Manual focuses on the function of Wyndham Street as a public space, and seeks to give equal prioritization to all modes of transportation to provide wide boulevards, on- street parking and shared travel lanes with no curbs. The manual also includes the redesign of St. George's Square as a central gathering square with a traffic circle around the periphery.

2.3 Transportation Master Plan Update (2022)

Completed in 2022, Guelph's 2022 Transportation Master Plan (TMP) update, lays out how residents and visitors will move through the city over the next three decades. The TMP classifies Wyndham Street North within the study area as a Downtown Main Street, and recommends the following improvements within the study area:

- On-Street Spine Cycling Network (off-road protected facility - all ages and abilities);
- Quality Transit Network-potential Lane conversion of existing travel lanes; and

- Pedestrian Priority Network: wide sidewalks and high-quality walking environments

No recommendations are explicitly stated for St. George's Square, however, the recommendations discussed above are recommended to be carried through the Wyndham / Douglas / Quebec Streets intersection.

2.3.1 Additional Ongoing Relevant Planning Documents

Furthermore, it is understood that the Downtown Parking Master Plan and Solid Waste Master Plan are currently underway and will set out additional requirements for the Wyndham Street corridor right-of-way.

2.4 Public and DGBA

2.4.1 Feedback from the Public

During the first Open House and associated online engagement, as well as during three public engagement pop-up events held in Summer 2022, the public was asked to provide their input on goals for Wyndham Street that should be considered for the study. A summary of their responses is provided below.

- A pleasant streetscape and atmosphere, more green spaces and trees
- Increased safety for all road users, including those who walk and bike, aligning with the City's modal split goal
- Making downtown more pedestrian-friendly and family-friendly
- Considerations for accessibility and universal design
- Maintaining parking for individuals with accessibility concerns
- Dedicated loading zones for businesses
- Compassionate response for those experiencing homelessness and mental health challenges
- Reduce negative impacts on the environment; consider climate change mitigation and adaptation
- Consider connections within and outside of the downtown core
- Retaining the "village" or "small-town" feel of downtown; ensure downtown is a "destination"
- Consider the impact of winter weather in design
- Consideration of the needs/input of businesses in the process
- Addressing local crime

2.4.2 Feedback from DGBA

The project team has held two meetings with the Downtown Guelph Business Association (DGBA) Executive to gather feedback on the function of Wyndham Street. A summary of their input is provided below.

- Desire for this project to improve and enhance the economic vitality of Downtown Guelph
- Importance of downtown as a commercial district, which addresses the needs of the business community
- Importance of placemaking; solutions for the downtown need to create a feeling of destination

It is noted that there has been significant turnover in the DGBA executive since these meetings were held.

2.5 Summary

The vision for Wyndham Street as set out by these key City planning documents, as well as the public and DGBA engagement completed as part of the Downtown Renewal project to date, are summarized in the table below. Key aspects of the street cross-section including Parking, Cyclists, Transit, Number Travel Lanes, Pedestrian Realm, Public Realm, Flexibility, Street Trees, and Vehicle Speeds are considered.

Table 2.1 – Wyndham Street Vision

Planning Document	Downtown Secondary Plan (2012)	Streetscape Manual (2014)	Transportation Master Plan (2022)	Public Outreach Downtown Renewal (2022)
Parking	• Both sides of the street	• Angled parking on the west side of the street and parallel parking on the east	• No comment, refers to updating the Downtown Parking Master Plan (underway, no recommendations)	• Mixed support for parking • Desire for parking for individuals with accessibility needs
Cyclists	• Dedicated Cyclist Facility (1.5-meter-wide on-street bicycle lanes)	• Cyclists and traffic vehicles share the traveled portion of the road. Intent is to slow traffic so that cyclists and vehicles will be moving at similar speeds	• On-Street Spine Cycling Network (off-road protected facility to accommodate all ages and abilities)	• Strong support for cyclist facilities (emphasis on safety)
Transit	• Transit priority street (signal priority and queue-jumping lanes)	• Provide transit service but recognizing impact to transit from slowing vehicles	• Quality Transit Network-potential lane conversion of existing travel lanes	• Desire for transit to be accommodated in design
Travel Lanes	• Two (no width specified)	• Two 3.5-meter-wide travel lanes	• 4 lanes with conversion of existing lanes for transit	• Strong support for two lanes
Pedestrian Realm	• 6 meters per side • Create an environment that encourages walking everywhere Downtown	• 5.8-meter-wide boulevard space on west side, and 8.2 meter-wide boulevard space on east side including 2-meter-wide pedestrian clearway and 2-meter-wide planting + furnishing zones on each side	• Pedestrian Priority Network: wide sidewalks and high-quality walking environments	• Desire for safe, attractive environment for pedestrians
Public Realm / Flexibility	• Primary Streetscape (additional boulevard space to accommodate restaurant patios and a clear area for pedestrians, trees, planters and street furnishings) • St. George's Square redesigned as a central gathering place with transit hub	• Focus on pedestrian realm and placemaking of Downtown • Places all users and elements of the street at the same elevation (i.e. no curbs), allowing for unrestricted movement between roadway and boulevard zones	• Classified as Downtown Main Street (subject to recommended Complete Streets Design Guide)	• Strong support for flexibility & balance of uses • Vibrancy and attractiveness of downtown • Provision for public space, green space • Access to businesses is important
Street Trees	• Primary Streetscape lined with consistently spaced trees 6-8 metres apart via soil cells	• Closed tree pits with tree grates and continuous soil trenches utilizing soil cells and permeable paving	• Enhance the public realm with street trees and other amenities to encourage a sense of community	• Desire for street trees
Vehicle Speeds	• Discourage fast-moving vehicular traffic Downtown	• Intentionally slow vehicles to 30 km/h operating speeds	• Classified as Downtown Main Street with no explicit recommended speed limit	• Some desire for traffic calming or fewer cars altogether

3.0 WYNDHAM STREET CROSS-SECTION

Under Phase 2 of the Class EA process, all reasonable solutions to address the problem and opportunity statement will be considered, including the "Do Nothing" alternative. The sections below document the long list of alternative solutions considered, and preliminary recommendations for the short for the Wyndham Street North cross-section.

The long list of options summarized below were presented for input to the public at the first Public Open House held November 2, 2022, and were distributed to City staff for review within the Alternative Solutions Preliminary Technical Memorandum (April 19, 2022). Please refer to these documents for further information on the alternative options, as required.

3.1 Wyndham Street Cross-Section Long List Options

The cross-section alternatives focus on the number of traffic lanes, and order of cyclist facilities, as these items are expected to be the main differentiator and will dictate the space available within the rest of the ROW for parking, flexible use, marketing, and planting / furnishing zones.

Several alternative parking, flex use, and planting / furnishing zone configurations can be developed within each alternative cross-section listed below. 2-meter-wide pedestrian clearways are provided within all alternative solutions. Preliminary renderings have been developed for a number of the potential cross-sections for discussion purposes.

1) Do Nothing: The Wyndham corridor would remain as is, with no improvements undertaken. This alternative is required to be considered under the Municipal Class EA planning process as a baseline for the comparison of alternative solutions.

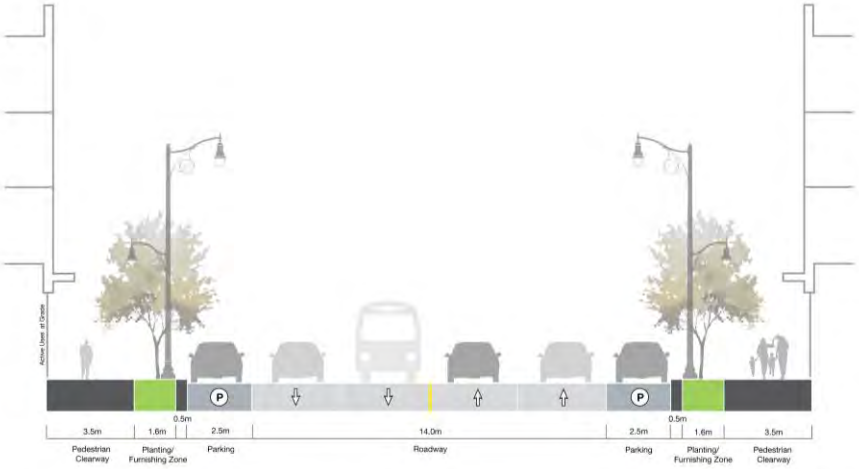

Exhibit 3-1: 4-lane (Do Nothing) Cross-Section

2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street* (Added following PIC #1): Recommended by the 2014 Streetscape Manual. one lane of traffic in each direction (3.5 meters wide) is shared by vehicles, cyclists, and transit. Angled parking on the west side of the street and parallel parking on the east. Curbless flexible use zones are provided on both sides of the street, with a larger marketing zone on east side of the road.

Exhibit 3-2: 2-Lane with Shared Use Lanes and Angled Parking (Source: City of Guelph Downtown Streetscape Manual & Built Form Standards, 2014)

2 a) (ii) – Two-lanes with Shared Use and Parallel Parking: One lane of traffic in each direction (3.5 meters wide) is shared by vehicles, cyclists, and transit. 3.15-meter-wide marketing zones, 2.9-meter-wide planting / furnishing zones, and parking / flexible use zones are provided on both sides of the street.

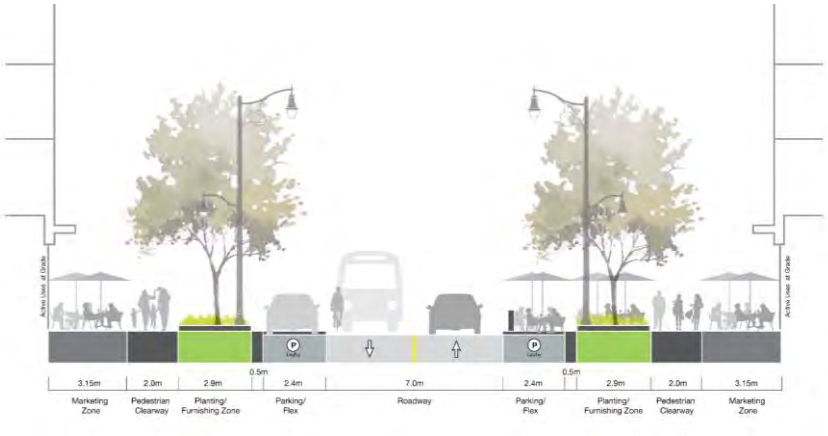

Exhibit 3-3: 2-Lane with Shared Use Lanes and Parallel Parking

2 b) – Two-lanes with Buffered Bike Lanes: One lane of traffic in each direction (3.5 meters wide) and 1.8-meter-wide bicycle lanes and 0.5-meter-wide painted buffers are installed on

both sides. Cyclists are accommodated via bicycle lanes, but still share the roadway with vehicles as there is no physical barrier separating cyclists and vehicles. Parking / flex zone and, with marketing and planting / furnishing zones can be accommodated on both sides of the street.

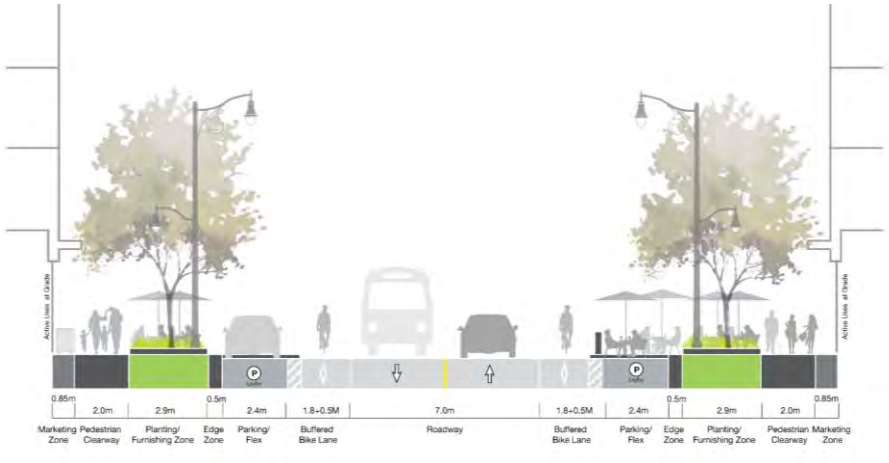

Exhibit 3-4 – 2-Lane Configuration with Buffered Bike Lanes

2 c) (i) – Two-lanes with Uni-Directional Bike Path: One lane of traffic in each direction (3.5 meters wide) and 1.8-meter-wide cycle tracks are installed on both sides of the road. Parking is provided on both sides of the road, with no flexible use zone, unless the parking lane is utilized for the bike path as shown in Exhibit 3-6.

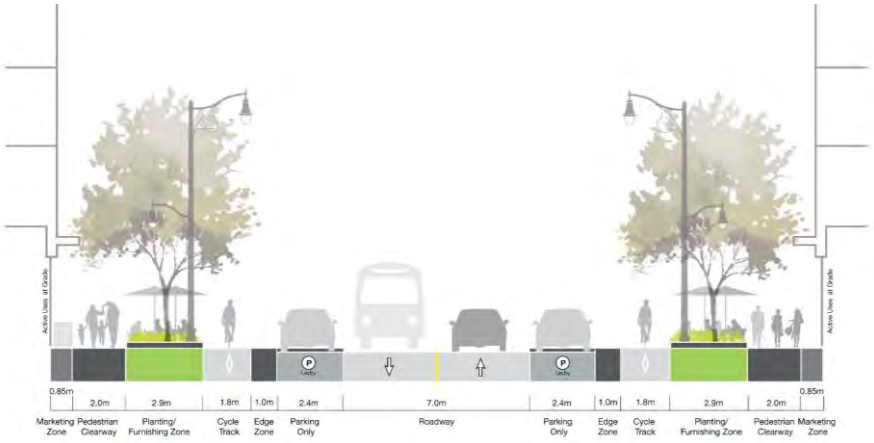

Exhibit 3-5: 2-Lane Configuration with Uni-Directional Cycle Track and Flex on One Side of Street

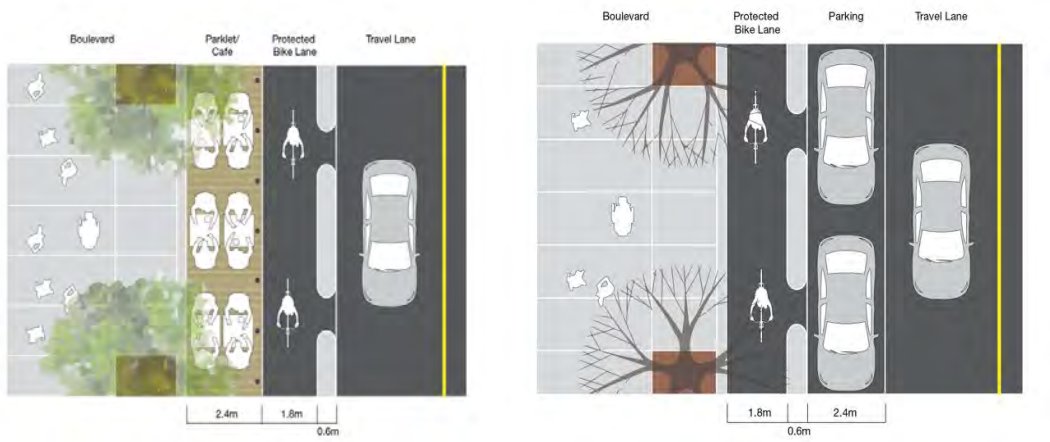

Exhibit 3-6: Seasonal Configuration of Bike Path in Parking Lane

2 c) (ii) – Two-lanes with Bi-Directional Bike Path: One lane of traffic in each direction (3.5 meters wide) and 3-meter-wide bi-directional cycle track is installed on one side of the road. Parking, marketing and planting / furnishing zones can be accommodated on both sides of the street, with flex use zone available on one side of the street, opposite the cycle track.

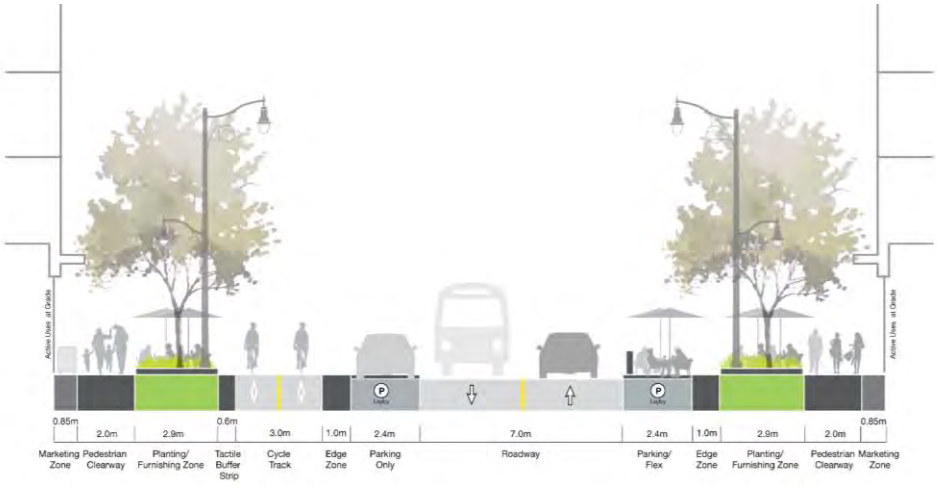

Exhibit 3-7: 2-Lane Configuration with Bi-Directional Cycle Track and Flex on One Side of Street

3. Four-lanes with Bike Path: As recommended in the City of Guelph Transportation Master Plan Update, one general purpose lane of traffic in each direction (3.5 meters wide) and one lane of traffic in each direction dedicated for transit vehicles, either at different times of day or all-day (3.5 meters wide). Dedicated cyclist facilities (i.e., cycle track or buffered bike lane) would be provided as part of the core Spine Cycling network. Marketing, planting / furnishing, and parking / flex use zones minimized.

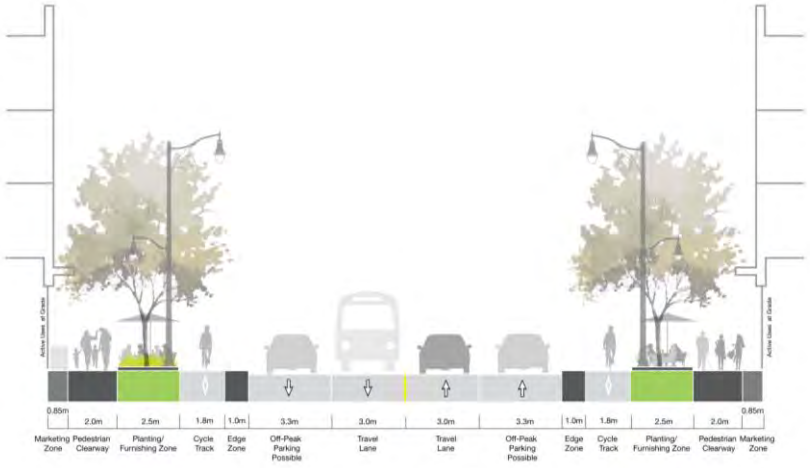

Exhibit 3-8: 4-Lane Configuration with Uni-Directional Cycle Track

4 – Public Space (no vehicle lanes): Street is reserved for pedestrian-only use (no lanes for vehicles or cyclists). Large areas for flexible uses.

Exhibit 3-9: Public Space (no vehicle lanes)

3.2 Wyndham Street Cross-Section Preliminary Recommended Short-List (For Discussion)

The table below summarizes how each option described above aligns with the policy documents completed by the City and discussed in **Table 2.1**.

Table 3.1 - Preliminary Review of Long Listed Options (Wyndham Street Cross-Section)

	1 Do Nothing	2 a) (i) Two lanes with Shared Use and Angled Parking on One Side of Street	2 a) (ii) Two lanes with Shared Use and Parallel Parking	2 b) Two lanes with Buffered Bike Lanes	2 c) (i) Two lanes with Uni Directional Bike Path	2 c) (ii) Two lanes with Bi Directional Bike Path	3. Four lanes with Bike Path	4 Public Space (no vehicle lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Does not align with TMP Goals.	Does not align with TMP Goals.	Somewhat aligns with TMP Goals.	Mostly aligns with TMP Goals.	Mostly aligns with TMP Goals.	Fully aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6 meter pedestrian realm and dedicated cyclist facility)	Does not align with			Fully aligns with	Fully aligns with	Fully aligns with Secondary Plan Goals.	Does not align with	
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Fully aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Does not SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals						Provides improved flexibility.	Does not provide improved	
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Does not align with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Not desired by public.	Not desired by public.	Some public support.	Desired by public.	Desired by public.	Not desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Not Recommended to be Carried Forward

3.2.1 Preliminary Recommended Short List

It is clear that none of the options will fully achieve the diverse range of goals set out by the City's policy documents, the public, and the Downtown Businesses. As noted in the City's Official Plan "the City will balance the provision of a safe, functional and attractive pedestrian-oriented environment with an acceptable level of vehicular traffic… the City will also balance the need for, where appropriate, bicycle facilities, loading facilities, transit priority measures, on-street parking and other infrastructure needs, including street trees. These issues will be considered in a holistic manner to create a final design which is sensitive to the urban context of Downtown and the street classification."

As such, the preliminary recommended short-list includes a wide variety of options including options ranging from shared-use lanes to fully separated cyclist facilities and includes:

- Do Nothing (Required to be carried forward)
- Two-Lanes Shared Use with Parallel Parking
- Two-Lanes with Buffered Bike Lanes
- Two-Lanes with Uni-Directional Bike path
- Two-Lanes with Bi-Directional Bike path

Options not recommended to be carried forward for full evaluation include:

- Two-Lanes Shared Use with Angled Parking
- Four-Lanes
- Public Space (no vehicle lanes)

4.0 WYNDHAM / QUEBEC / DOUGLAS INTERSECTION AND ST. GEORGE'S SQUARE CONFIGURATION

4.1 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Long List Options

The long list of options summarized below were presented for input to the public at the first Public Open House held November 2, 2022, and were distributed to City staff for review within the Alternative Solutions Preliminary Technical Memorandum (April 19, 2022). Please refer to these documents for further information on the alternative options, as required.

Option 1: Do Nothing – The Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration would remain as is, with no improvements undertaken.

Exhibit 4-1: Do Nothing

Option 2: Standard Intersection Improvements – Operational improvements (i.e., left turn lanes, signage, pavement markings, curb radii etc.) to the intersection are undertaken to improve vehicle and pedestrian operations, with upgrades to St. George's Square in its current configuration. The intersection remains signalized, and St. George's Square remains on the fragmented along the periphery of the intersection.

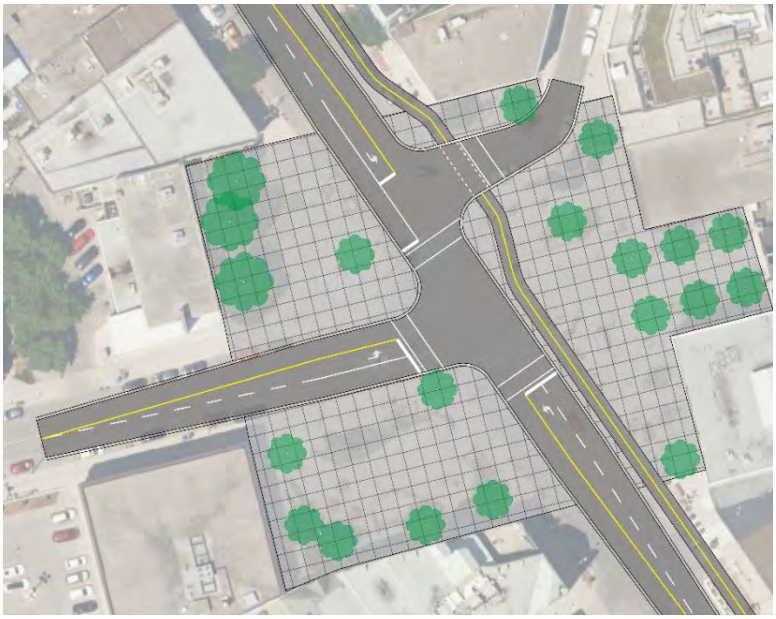

Exhibit 4-2: Standard Intersection Improvements

Option 3: Realigned Four-leg Intersection – Realign Quebec Street and Douglas Street to tie into Wyndham Street at a standard four-leg intersection. Minor reconfiguration of St. George's Square to make room for new intersection alignment. Can provide flexibility for events when intersection is closed,

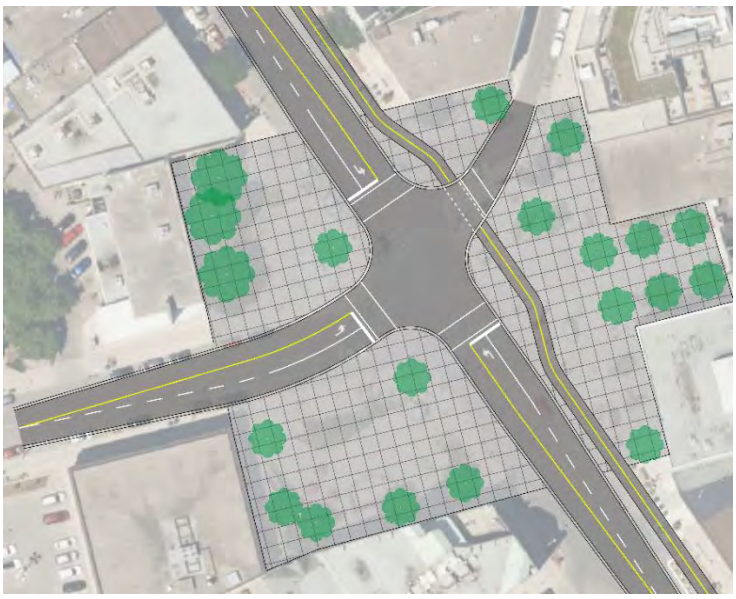

Exhibit 4-3: Realigned Four-leg Intersection

Option 4: Roundabout – Realign Quebec Street and Douglas Street to tie into Wyndham Street as a standard roundabout. Some reconfiguration of St. George's Square to make room for new intersection layout. Can provide flexibility for events when intersection is closed

Exhibit 4-4: Roundabout Intersection

Option 5: Traffic Circle – As recommended in the 2014 Streetscape Manual, the Wyndham Street / Quebec Street and Douglas Street intersection is reconstructed to create a one-way continuously flowing roundabout, with St. George's Square reinstated as a central plaza. On-street parking is provided at select locations along the periphery of the roundabout.

Exhibit 4-5: Traffic Circle Intersection

Option 6: Public Space (No Vehicle Lanes) – Intersection is closed to vehicles and reserved for pedestrian-only use with no formal accommodation of cyclists. Closure of Quebec Street, Douglas Street and Wyndham Street prior to intersection.

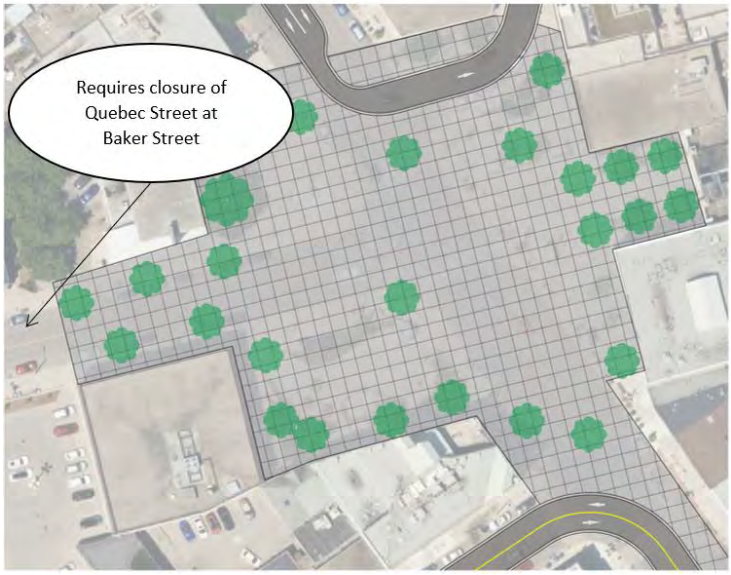

Exhibit 4-6: Public Space Intersection

4.2 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Preliminary Recommended Short-List (For Discussion)

The table below summarizes how each option described above aligns with the policy documents completed by the City and discussed in **Table 2.1**.

Table 4.1 - Preliminary Review of Long Listed Options (St. George's Square)

	1 Do Nothing	2 Standard Intersection Improvements	3 Realigned Four leg Intersection	4 Roundabout	5 Traffic Circle	6 Public Space (No Vehicle Lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Somewhat aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6 meter pedestrian realm and dedicated cyclist facility, central gathering space)	Does not align with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Provides improved flexibility.
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Some public support.	Some public support.	Not desired by public.	Desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward

4.3 Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration Preliminary Recommended Short-List (For Discussion)

Similar to the options for the Wyndham Street cross-section none of the options for the Wyndham / Quebec / Douglas Intersection and St. George's Square Configuration fully achieve the diverse range of goals set out by the City's policy documents, the public, and the Downtown Businesses. As noted in the City's Official Plan "the City will balance the provision of a safe, functional and attractive pedestrian-oriented environment with an acceptable level of vehicular traffic… the City will also balance the need for, where appropriate, bicycle facilities, loading facilities, transit priority measures, on-street parking and other infrastructure needs, including street trees. These issues will be considered in a holistic manner to create a final design which is sensitive to the urban context of Downtown and the street classification."

As such, the preliminary recommended short-list includes a wide variety of options including of options including:

- Option 1: Do Nothing (Required to be carried forward)
- Option 2: Standard Intersection Improvements
- Option 3: Realigned Four-leg Intersection
- Option 5: Traffic Circle

Options not recommended to be carried forward for full evaluation include:

- Option 4: Roundabout
- Option 6: Public Space (no vehicle lanes)

5.0 EVALUATION OF SHORT-LISTED OPTIONS

Following input from the City staff at the workshop February 23rd, the project team will move forward with evaluation of the short-listed options, to identify a preliminary recommended solution.

The evaluation of alternative solutions will be completed based on criteria that represent the broad definition of the environment as described in the EA Act. The general evaluation criteria to be used in evaluating the alternative solutions are outlined in Table 5.1 -. The criteria to be considered for each of the categories are described in detail in the in the Alternative Solutions Preliminary Technical Memorandum.

The project team will comparatively rank each alternative solution from least desirable to most desirable, for each of the criteria described above, to determine the preliminary preferred solution(s).

Table 5.1 - Evaluation Criteria

Evaluation Criteria	Description of Evaluation Criteria
Traffic Operations & Technical	How will the alternative serve the existing and future vehicular, pedestrian and cycling traffic needs? Does the solution allow the City to upgrade municipal infrastructure?
Socio-Economic Environment	What impacts will the alternative have on the local community?
Natural Environment and Climate Change	How does the alternative affect existing vegetation, water quality, fisheries/wildlife and habitat? Does the alternative address climate change?
Cultural Heritage / Archaeological	Will the alternative affect archaeological, cultural heritage resources or Indigenous communities?
Financial	What is the capital cost of the alternative? What is the cost for utility relocations and property acquisitions? What are the operation and maintenance costs?

The evaluation of the short-listed options, including the preliminary recommendation(s) will be presented to the Downtown Guelph Businesses, followed by the public, at the Second Public Open House. The input received from the business stakeholders and members of the public will help to confirm the preliminary preferred solution.

Wyndham Street Municipal Class Environmental Assessment Options

Long List to Short List Workshop – Information Package

February 23, 2023

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Wyndham Street – Options (Long List)

1. Do Nothing
2. Two-Lanes
   a. Shared Use
      i. Angled Parking*
      ii. Parallel Parking
   b. Buffered Bike Lanes
   c. Bike path
      i. Uni-Directional
      ii. Bi-Directional
3. Four-Lanes
4. Public Space (no vehicle lanes)

* Added to long list following feedback at PIC #1

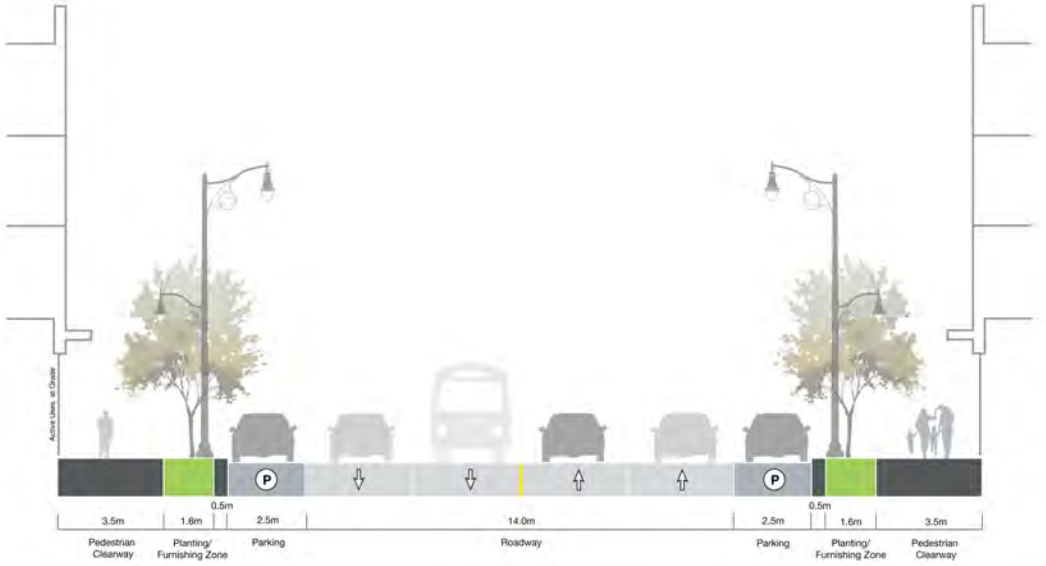
Note: The options presented focus on the number of lanes available for vehicles and the types of accommodation for cycling.

The decision made on these two elements will determine how the roadway will function and how much space is available within the rest of the roadway for parking and other uses such as events, plantings or seating areas.

Option 1: Do Nothing

- Pavement and underground infrastructure is replaced, and the street configuration stays the same.
- Four-lanes for vehicles.
- One lane can be closed and used for other flexible purposes (i.e., events, patios) with seasonal barriers.
- Cyclists continue to share the road without added protection.

Note: This option is required to be considered under the Municipal Class EA planning process as a baseline for comparison.



3a) Do-Nothing Cross-Section

3b) Existing Cross-Section

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Option 2a(i): Two-lanes with Shared Use and Angled Parking on One Side of Street

- Two-lanes for vehicles.
- Cyclists share the road with vehicles and have no additional protection.
- Parking areas can be used for other flexible purposes.

4a) Two-lane Configuration with Shared Use Lanes and Angled Parking on One Side of Street

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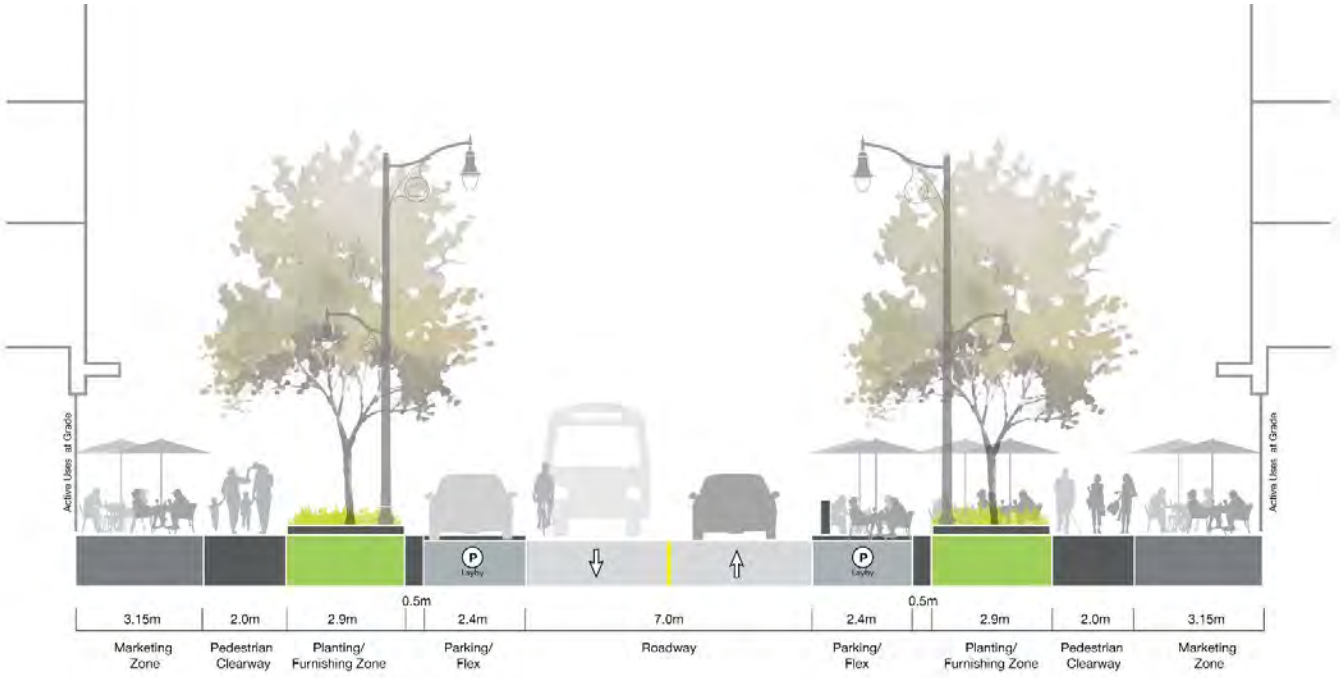
Option 2a(ii): Two-lanes with Shared Use and Parallel Parking

- Two-lanes for vehicles.
- Cyclists share the road with vehicles and have no additional protection.
- Parking areas can be used for other flexible purposes.



5a) Two-lane Configuration with Shared Use Lanes and Parallel Parking

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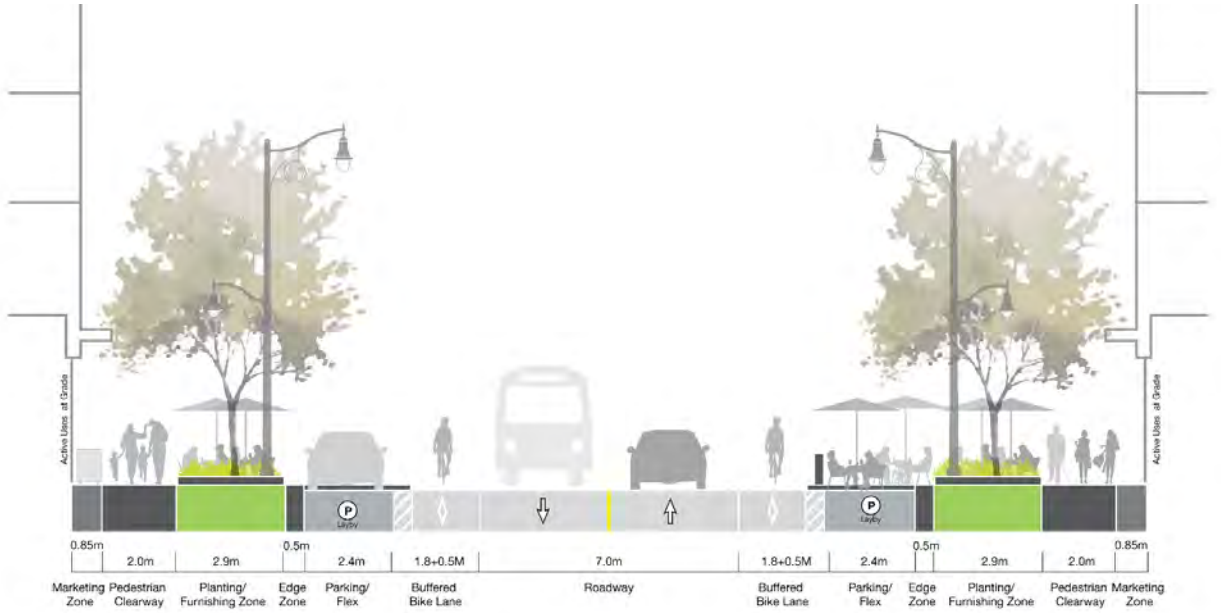
Option 2b: Two-lanes with Buffered Bike Lanes

- Two-lanes for vehicles.
- Bike lanes are separated from vehicles and parking areas with a painted buffer.
- Parking areas can be used for other flexible purposes.



6a) Two-lane Configuration with Buffered Bike Lanes

6b) Example of a buffered bike lane (Source: ZICLA)

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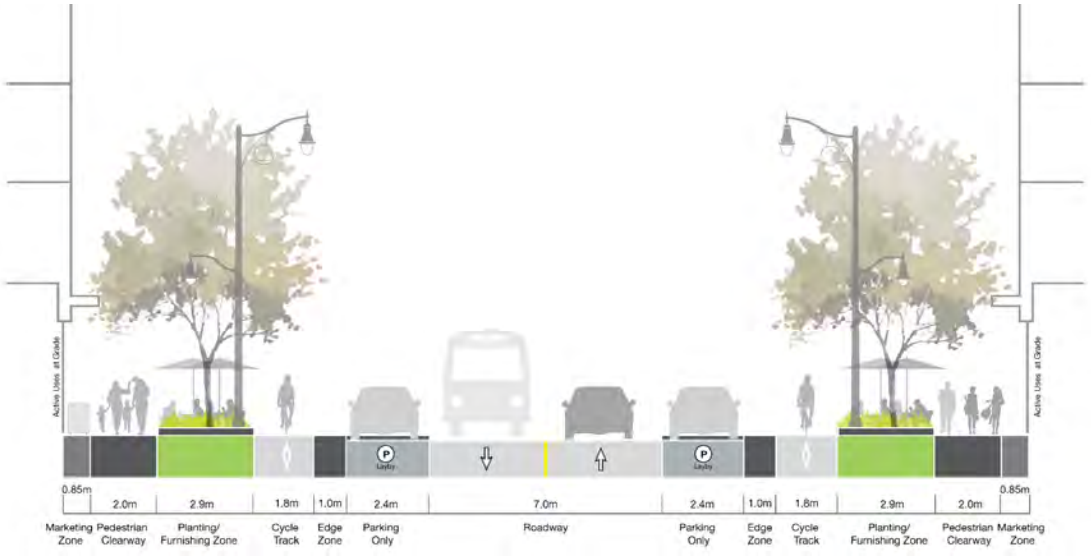
Option 2c(i): Two-lanes with Uni-Directional Bike Path

- Two-lanes for vehicles.
- Cyclists have a separate lane with physical buffer providing separation from vehicles and parking areas on both side of the road.
- Areas beside the bike path can be used for parking. Other purposes for the parking spaces can be accommodated only when the bike path is closed.



7a) Two-lane Configuration with one-way bike path

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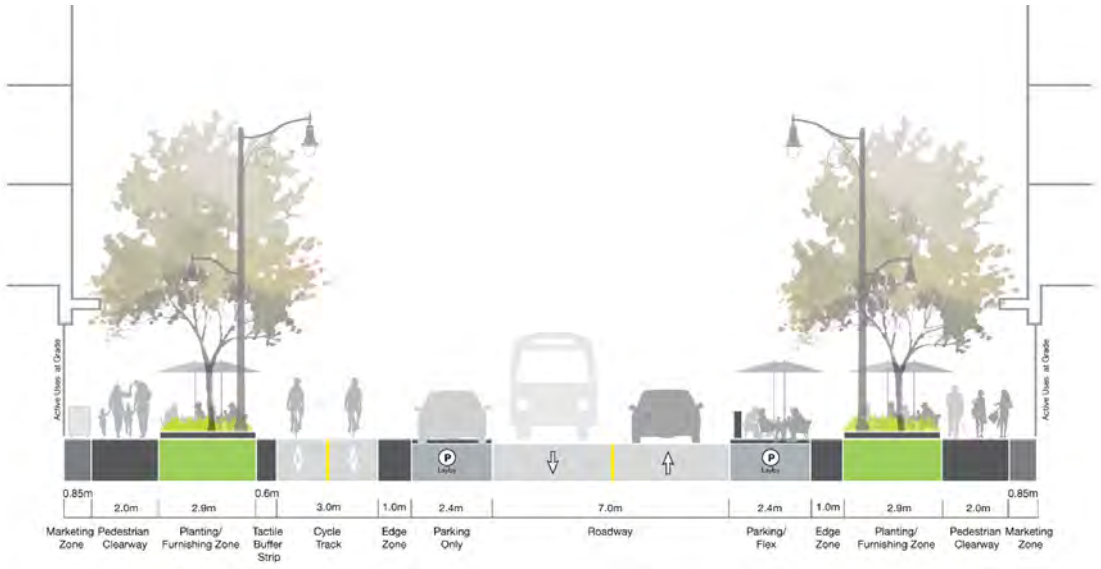
Option 2c(ii): Two-lanes with Bi-Directional Bike Path

- Two-lanes for vehicles.
- Cyclists have a separate lane with physical buffer providing separation from vehicles and parking areas on one side of the road.
- Areas beside the bike path can be used for parking. Other purposes for the parking spaces can be accommodated only when the bike path is closed.
- Parking area on other side of road can be used for other flexible purposes.



8a) Two-lane Configuration with two-way bike path

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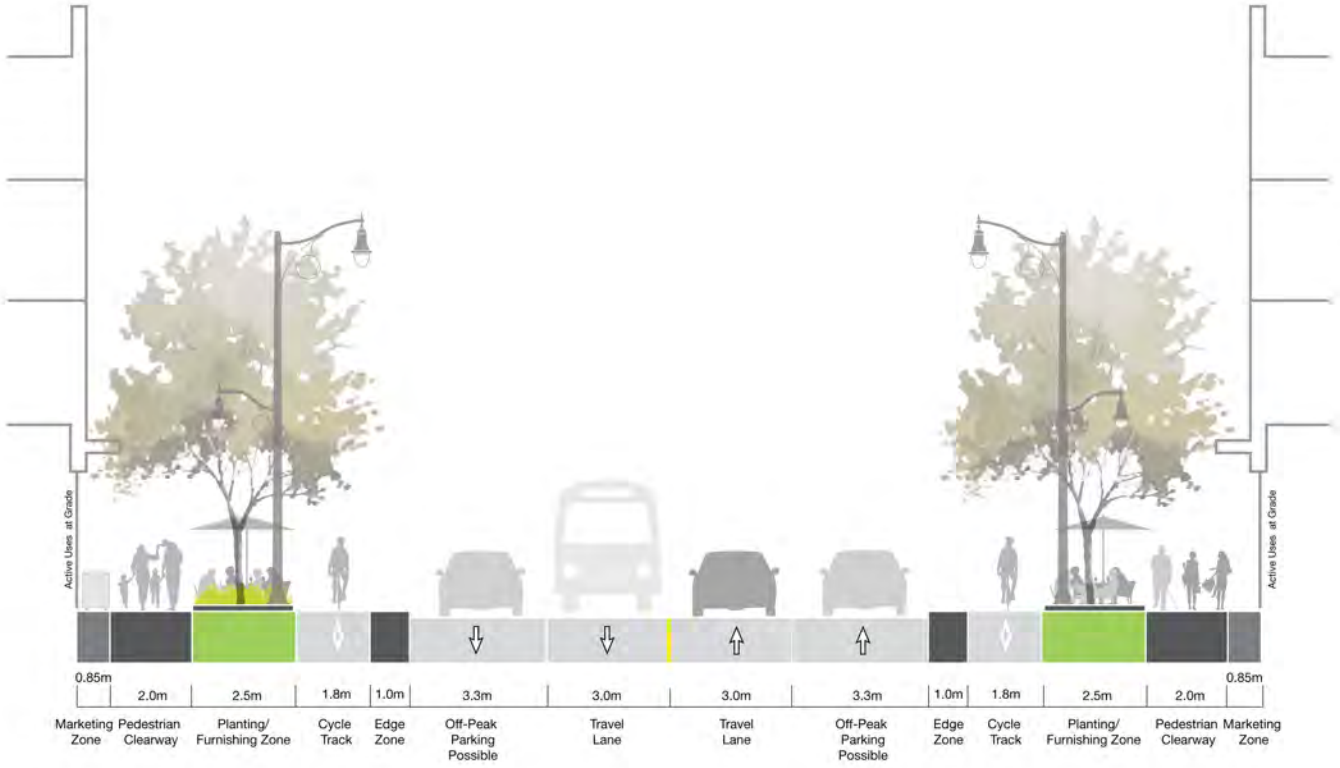
Option 3: Four-lanes with Bike Path

- Four-lanes for vehicles.
- Cyclists have a bike path with physical buffers providing separation from vehicles and parking areas (one or both sides of the road).
- Areas beside the bike path can be used for parking. Parking spaces can have other flexible uses only when the bike path is closed.



9a) Four-lane Configuration with one-way bike path

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Option 4: Public Space (no vehicle lanes)

- Street is reserved for pedestrian-only use (no lanes for vehicles or cyclists).
- Large areas for flexible uses.

10a) Public Space Configuration

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Long List of Wyndham / Quebec / Douglas / Intersection & St. George's Square Options

1. Do Nothing
2. Standard Intersection Improvements
3. Realigned Four-leg Intersection
4. Roundabout
5. Traffic Circle
6. Public space (no vehicle lanes)

Option 1: Do Nothing

- Below-ground infrastructure replaced, and existing St. George's Square and intersection is re-instated.
- No improvements to the existing intersection.
- St. George's Square configuration remains as is.

Note: This option is required to be considered under the Municipal Class EA planning process as a baseline for comparison.

12a) Existing Intersection Configuration

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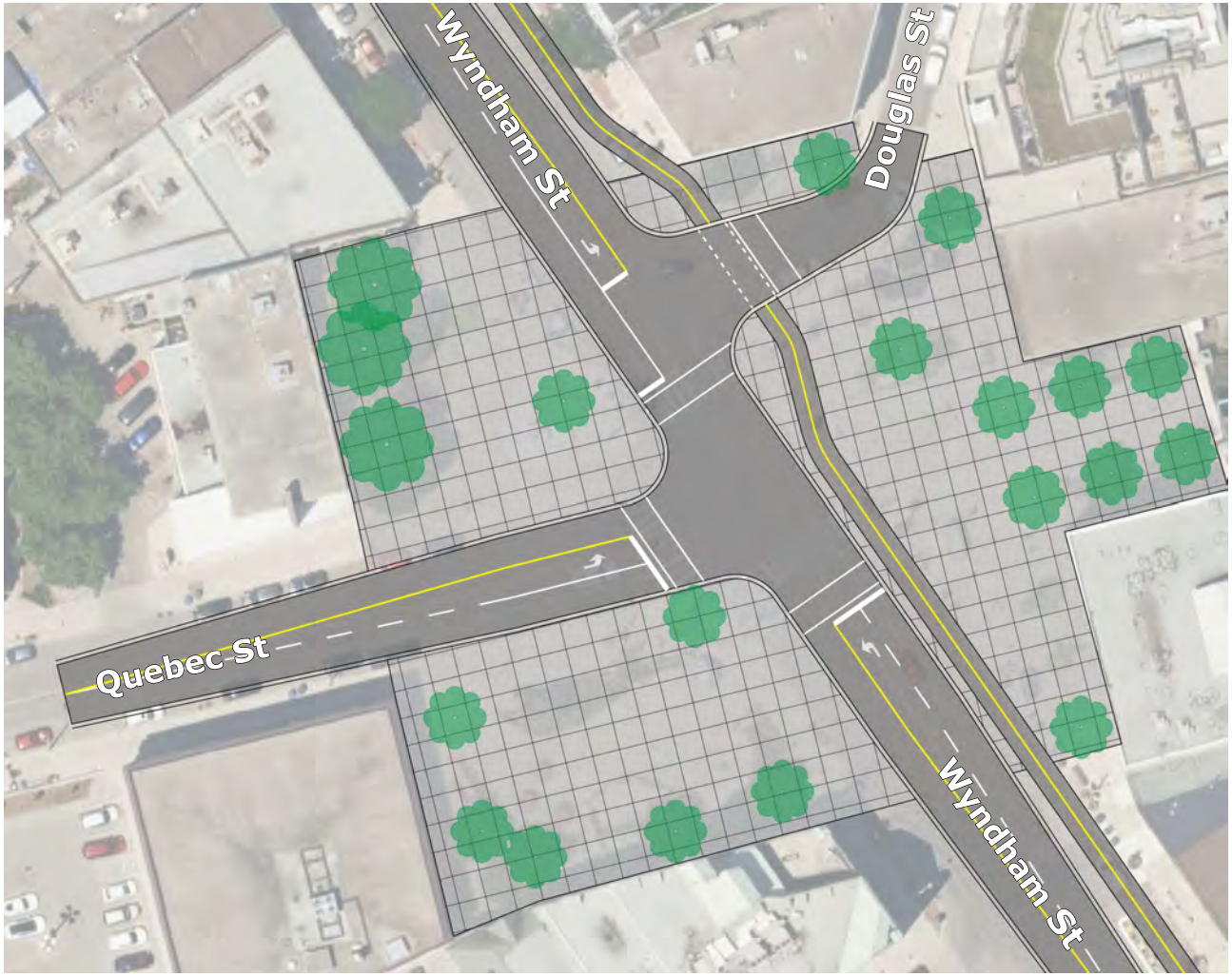
Option 2: Standard Intersection Improvements

- Improvements that make it easier to drive, walk and cycle (i.e. left turn lanes, signage etc.).
- Reconstruction of St. George's Square in its current configuration.
- Provides flexibility for events but requires intersection closures.



13a) Standard Intersection Configuration. Note: Assumes two-lane cross-section with two-way bike path (actual number of travel lanes and accommodation for cyclists to be confirmed).

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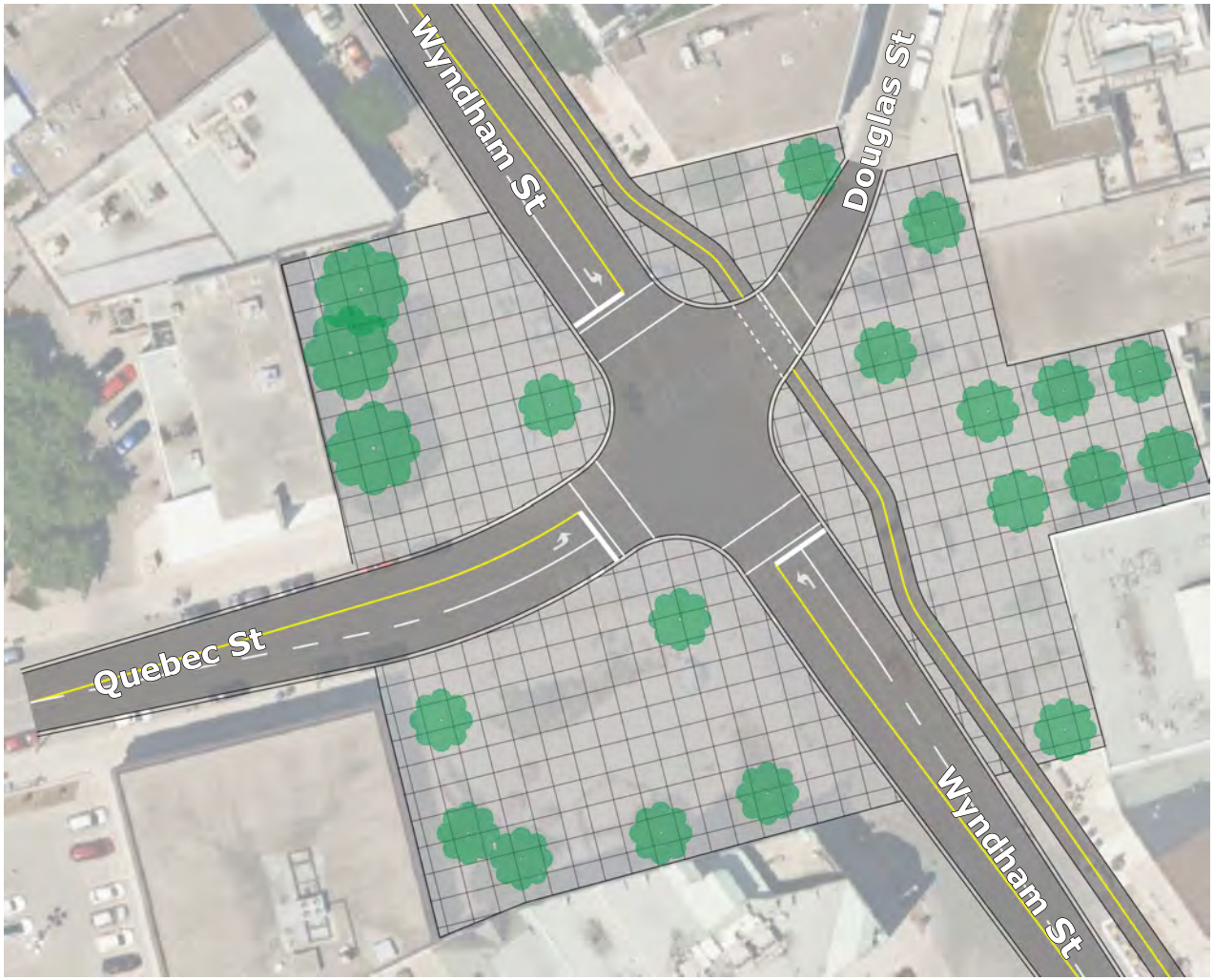
Option 3: Realigned Four-leg Intersection

- Realign Quebec Street and Douglas Street to tie into Wyndham Street at a standard four-leg intersection.
- Minor reconfiguration of St. George's Square to make room for new intersection alignment.
- Can provide flexibility for events when intersection is closed



14a) Realigned four-leg Intersection Configuration. Note: Assumes two-lane cross-section with two-way bike path (actual number of travel lanes and accommodation for cyclists to be confirmed).

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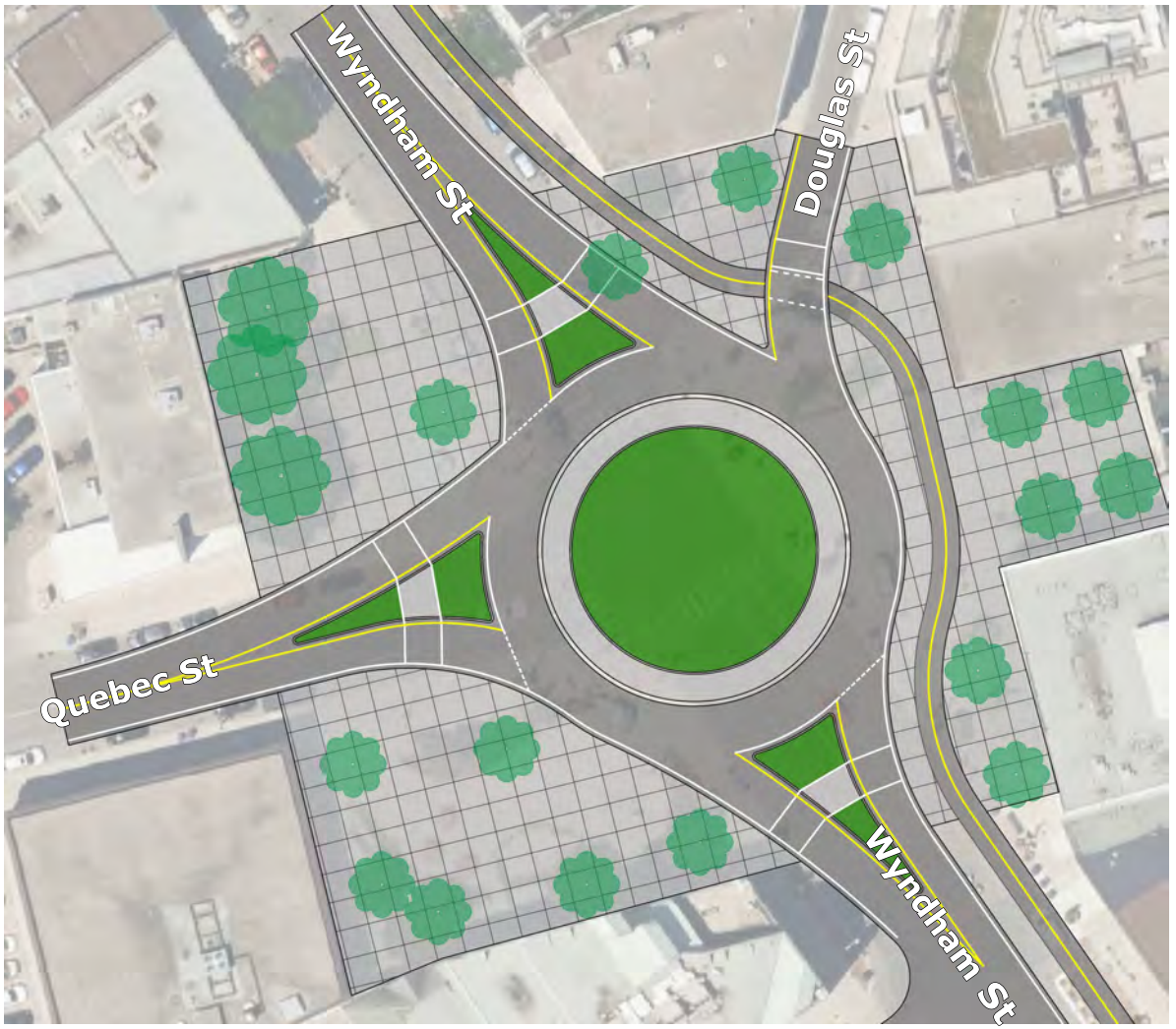
Option 4: Roundabout

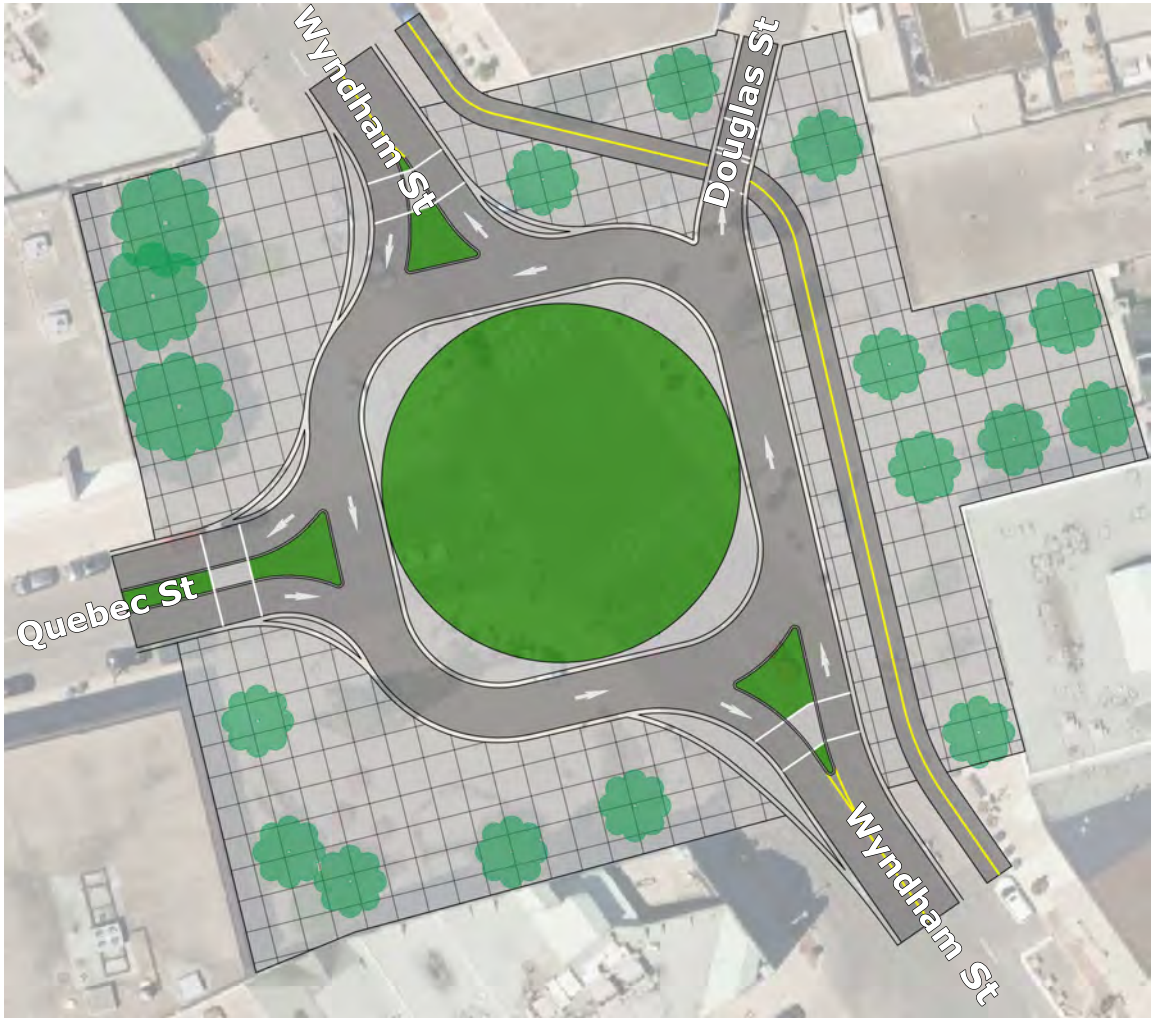
- Realign Quebec Street and Douglas Street to tie into Wyndham Street as a standard roundabout.
- Some reconfiguration of St. George's Square to make room for new intersection layout.
- Can provide flexibility for events when intersection is closed



15a) Roundabout Intersection Configuration. Note: Assumes two-lane cross-section with two-way bike path (actual number of travel lanes and accommodation for cyclists to be confirmed).

Option 5: Traffic Circle

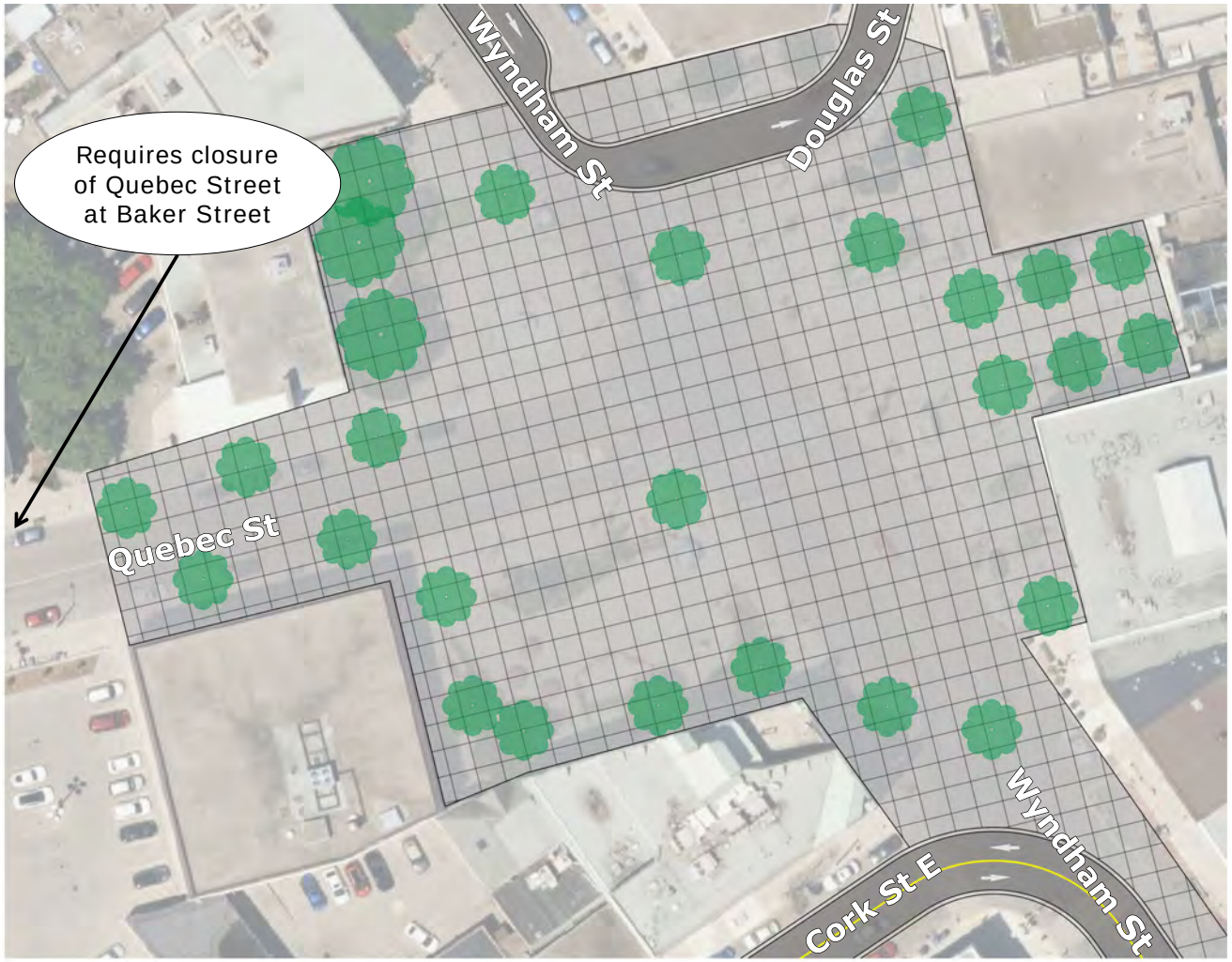
- Traffic flows continuously in one-way around the circle.
- Public plaza in the centre.
- Allows for events in the centre without closing the intersection.



16a) Traffic Circle Intersection Configuration. Note: Assumes two-lane cross-section with two-way bike path (actual number of travel lanes and accommodation for cyclists to be confirmed).

Option 6: Public Space (no vehicle lanes)

- Closure of Quebec Street, Douglas Street and Wyndham Street prior to intersection.
- Intersection is reserved for pedestrian-only use.
- No formal accommodation of cyclists.
- Large area for flexible uses.



17a) Public Space Configuration

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APPENDIX 2

LONG-LIST TO SHORT-LIST WORKSHOP SUMMARY

Meeting Summary

Downtown Renewal – Wyndham Street Class EA: Long-List to Short-List Workshop

Date: February 23, 2023
Location: Zoom Meeting
Time: 10:00 am to Noon
Chair: Susan Hall, LURA Consulting

Attendees:

City staff: Reg Russwurm, Laura Bragues, Andrew Miller, Leanne Warren, Jennifer Juste, Timea Filer, Robin Gerus, Paul Gray, Karen Chan, Jason Elliott, Stephen Robinson, Rory Templeton, Christine Chapman, Kate Berry, Dave Beaton, Gwen Zhang, David Di Pietro

Consultant team: Andrew McGregor, Connor MacIsaac, Stanley Pijl, Natalie Welch, Matt Di Maria, Melissa Gallina, Susan Hall, Sayan Sivanesan

Purpose:

- Review the "long list" of alternative solutions (options) presented at Open House #1 (Wyndham Street and St. George's Square)
- Build staff understanding of options within the context of higher-order planning documents and other City priorities/drivers/goals
- Pare down the "long-list" of options, to a "short-list" to move forward for a future robust evaluation
- General acceptance of options for further evaluation

Welcome & Introductions

Reg Russwurm, City of Guelph, welcomed attendees and outlined the meeting's purpose. Susan Hall, LURA, reviewed the agenda and the meeting format. Andrew McGregor, RVA, provided a review of the options for Wyndham Street and St. George's Square (as presented in the pre-meeting Technical Memo).

Workshop Overview

The workshop consisted of three main components, which were repeated for both Wyndham Street and St. George's Square.

1. In small groups, staff discussed the "preliminary review tables" (see Appendix A). Groups were asked to discuss whether the consultant's preliminary review aligned with their understanding of the key drivers (i.e., the TMP, Secondary Plan, etc.). Staff were asked to flag items they wanted to discuss with the full group.

2. As a full group, the consultant team reviewed the flagged items and facilitated an open discussion. The team responded to clarifying questions, as required.
3. Finally, the group was tasked with narrowing down the short-list to move forward for future evaluation. The options were narrowed down through a facilitated plenary discussion.

Feedback received from staff is summarized below.

Staff Input

Wyndham Street

Feedback on Options

- Option 1 – Do Nothing
    - No comments
- Option 2a (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street
    - Some participants felt that this option aligned with Secondary Plan goals
    - Shared use does not provide equity on either side of the street
    - Review alignment with Natural Environmental Goals
        - This option is more conducive to open tree planters
    - Clarify why one two-lane option is red and one is yellow
        - Both have the same amount of parking space
- Option 2a (ii) – Two-lanes with Shared Use and Parallel Parking
    - Some participants felt that this option aligned with Secondary Plan goals
    - Review alignment with Natural Environmental Goals
    - Provides vitality and equity on either side of the street
- Option 2b - Two-lanes with Buffered Bike Lanes
    - Buffer is being shown between parking and the bike lane, but not between the travel lane
    - Marketing zone is very small in this option
    - Review alignment with TMP goals
        - Cycling does not feel safe
- Option 2c (i) – Two-lanes with Unidirectional Bike Path
    - Option *does* align with TMP goals
        - Safest option for cycling
    - Review alignment with SSM and flexibility goals
        - Should both be red
- Option 2c (ii) – Two-lanes with Bidirectional Bike Path
    - No comments
- Option 3 - Four-lanes with Bike Path
    - Agreement that this option fully aligns with TMP goals

    - Staff were interested to see that this option was not desired by the public
- Option 4 - Public Space (no vehicle lanes)
    - No comments

General Comments

- All two-lane options need to accommodate deliveries
    - Recognize that we are planning for 20 years from now, our downtown will not remain static
    - Delivery vehicles will be customized to the space allocated
- Desire for equity in terms of the space that is available for businesses
    - Others are open to exploring asymmetrical streets which take advantage of microclimates
- Desire to have an option which looks at angled parking, as this builds on current work
- Climate change and low impact development need to be considered in detailed designs
- Some options would be better suited to certain seasons
- It is unclear how much pedestrian space is available in some options
- More information is needed in terms of how cycling infrastructure ties into the larger network
- Desire for less accommodation for cars, at the expense of other modes
- Streetscape manual needs to be fully considered in developing a solution
- Placement and accessibility of patios needs to be considered

Feedback on Short-List

The group agreed on the following options to be moved forward for a robust evaluation.

Option	Original Recommendation	Updated Recommendation
1	Required to be carried forward	Required to be carried forward
2a (i)	Not recommended to be carried forward	Recommended to be carried forward - *Desire to evaluate angled parking as one of the options*
2a (ii)	Recommended to be carried forward	Not recommended to be carried forward – *swap with above*
2b	Recommended to be carried forward	Not recommended to be carried forward – *safety concerns for cyclists*
2c (i)	Recommended to be carried forward	Recommended to be carried forward
2c (ii)	Recommended to be carried forward	Recommended to be carried forward
3	Not recommended to be carried forward	Not recommended to be carried forward

Option	Original Recommendation	Updated Recommendation
4	Not recommended to be carried forward	Not recommended to be carried forward

St. George's Square

Feedback on Options

- Option 1 – Do Nothing
  - No comments
- Option 2 – Standard Intersection Improvements
  - Review alignment with Natural Environment Goals
- Option 3 – Realigned Four-leg Intersection
  - Review alignment with Natural Environment Goals
- Option 4 – Roundabout
  - Concern that this option is not accessible
  - Does not align with TMP goals as it increases walking distance and does not create a good pedestrian environment
    - Efficiency is not the only goal of the TMP
  - Bus stops would need to be reallocated
  - This is more of a suburban treatment
- Option 5 – Traffic Circle
  - Concern that this option is not accessible
  - Keeps buses moving and avoids delays
  - Provides activation space, but need to understand how to access the centre
- Option 6 – Public Space (no vehicle lanes)
  - No comments

General Comments

- TMP is context specific, efficiency is not the only goal
- Review flow of Douglas Street
  - SSM encourages flow of traffic *into* the square
- Differing opinions about whether the roundabout and traffic circle provide the desired public space
  - Concern that these options are not accessible
  - Potential to close these spaces to traffic at certain times of the year
  - Desire to explore these options further, as there is public appetite for gathering space
- Assessment of accessibility needs to be considered in the robust evaluation
- Consider traffic priority signals
- Consider the impact of cost in the evaluation
  - For example, moving the fountain would have significant cost
- Suggestion to drop Option 2 in favour of Option 3 (pending technical review of grading and associated costs)

Feedback on Short-List

The group agreed on the following options to be moved forward for a robust evaluation.

Option	Original Recommendation	Updated Recommendation
1	Required to be carried forward	Required to be carried forward
2	Recommended to be carried forward	*Referred to project team for technical review* – Recommended to be carried forward based on technical review
3	Recommended to be carried forward	Recommended to be carried forward
4	Not recommended to be carried forward	Not recommended to be carried forward
5	Recommended to be carried forward	Recommended to be carried forward
6	Not recommended to be carried forward	Not recommended to be carried forward

Next Steps and Closing Remarks

Reg and Susan thanked staff for participating in the session. Staff were encouraged to share additional feedback after the meeting via email. Feedback will be used by the project team to proceed with a more robust evaluation of the short-listed options. Additional opportunities for staff engagement will be made available as the project progresses.

Appendix A – Miro Discussion Boards

See attached.

St. George's Square

Does the preliminary review align with your understanding of the key drivers?

Star 2 elements that are the biggest concern

Efficiency is not the only goal

Douglas street direction - SSM duration reversed

Table 4.1 - Preliminary Review of Long Listed Options (St. George's Square)

More of a suburban

	1 - Do Nothing	2 - Standard Intersection Improvements	3 - Realigned Four-leg Intersection	4 - Roundabout	5 - Circle	6 - Public Space (No Vehicle Lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Somewhat aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6-meter pedestrian realm and dedicated cyclist facility, central gathering space)	Does not align with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Somewhat aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides improved flexibility.	Provides improved flexibility.
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Some public support.	Some public support.	Not desired by public.	Desired by public.	Desired by public.
Preliminary Recommendation	Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	walking distance is longer	Recommended to be Carried Forward	Not Recommended to be Carried Forward

Flow of Douglas Street?

transit priority signals?

Wyndham Street

Does the preliminary review align with your understanding of the key drivers?

Star 2 i re the biggest concern

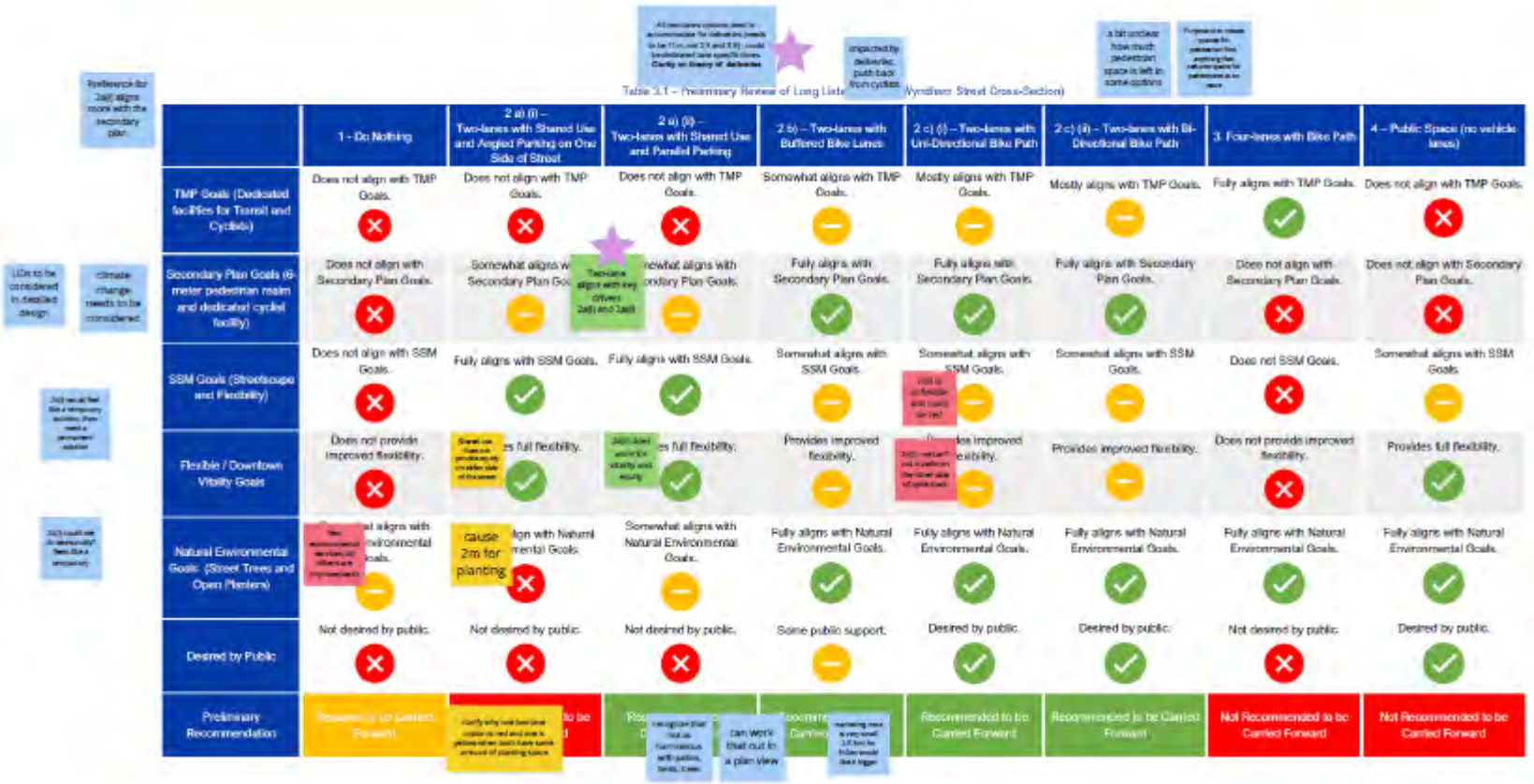
Table 3.1 – Preliminary Review of Long Listed ndham Street Cross-Sectio

	1 - Do Nothing	2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street	2 a) (ii) – Two-lanes with Shared Use and Parallel Parking	2 b) – Two-lanes with Buffered Bike Lanes	2 c) (i) – Two-lanes with Uni-Directional Bike Path	2 c) (ii) – Two-lanes with Bi-Directional Bike Path	3. Four-lanes with Bike Path	4 – Public Space (no vehicle lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Does not align with TMP Goals.	Does not align with TMP Goals.	Somewhat aligns with TMP Goals.	Mostly aligns with TM Goals.	aligns with TMP Goals.	Fully aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6-meter pedestrian realm and dedicated cycled facility)	Does not align with Secondary Plan Goals.	Somewhat aligns wi Secondary Plan Goa	ewhat aligns with ndary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Fully aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Does not SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	Provides full flexibility.	Provides full flexibility.	Provides improved flexibility.	Provides improved flexibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides full flexibility.
Natural Environmental Goals. (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals.	Does not align with Nat Environmental Goal	Somewhat aligns with tural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Not desired by publi	ot desired by public.	Some public support.	Desired by public.	Desired by public.	Not desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Not Recommended to be Carried Forward

Wyndham Street

Does the preliminary review align with your understanding of the key drivers?

Star 2 elements of biggest concern



	1 - Do Nothing	2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street	2 a) (ii) – Two-lanes with Shared Use and Parallel Parking	2 b) – Two-lanes with Buffered Bike Lanes	2 c) (i) – Two-lanes with Uni-Directional Bike Path	2 c) (ii) – Two-lanes with Bi-Directional Bike Path	3. Four-lanes with Bike Path	4 – Public Space (no vehicle lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Does not align with TMP Goals.	Does not align with TMP Goals.	Somewhat aligns with TMP Goals.	Mostly aligns with TMP Goals.	Mostly aligns with TMP Goals.	Fully aligns with TMP Goals.	Does not align with TMP Goals.
Secondary Plan Goals (6-meter pedestrian realm and dedicated cyclist facility)	Does not align with Secondary Plan Goals.	Somewhat aligns w… Secondary Plan Go…	…ewhat aligns with …ondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Fully aligns with Secondary Plan Goals.	Does not align with Secondary Plan Goals.	Does not align with Secondary Plan Goals.
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals.	Fully aligns with SSM Goals.	Fully aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Somewhat aligns with SSM Goals.	Does not SSM Goals.	Somewhat aligns with SSM Goals.
Flexible / Downtown Vitality Goals	Does not provide improved flexibility.	…s full flexibility.	…s full flexibility.	Provides improved flexibility.	…ides improved …ibility.	Provides improved flexibility.	Does not provide improved flexibility.	Provides full flexibility.
Natural Environmental Goals (Street Trees and Open Planters)	…ual aligns with …nvironmental …oals.	…ign with Natural …mental Goals.	Somewhat aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.	Fully aligns with Natural Environmental Goals.
Desired by Public	Not desired by public.	Not desired by public.	Not desired by public.	Some public support.	Desired by public.	Desired by public.	Not desired by public.	Desired by public.
Preliminary Recommendation	Recommended to be Carried Forward	…to be …	…	…mmended to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Not Recommended to be Carried Forward

Wyndham Street

Does the preliminary review align with your understanding of the key drivers?

Star 2 elements of biggest concern

Table 3.1 – Preliminary Review of Long Listed Options (Wyndham Street Cross-Section)

	1 - Do Nothing	2 a) (i) – Two-lanes with Shared Use and Angled Parking on One Side of Street	2 a) (ii) – Two-lanes with Shared Use and Parallel Parking	2 b) – Two-lanes with Buffered Bike Lanes	2 c) (i) – Two-lanes with Uni-Directional Bike Path	2 c) (ii) – Two-lanes with Bi-Directional Bike Path	3 - Four-lanes with Bike Path	4 – Public Space (no vehicle lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals. ✗	Does not align with TMP Goals. ✗	Does not align with TMP Goals. ✗	t aligns with Goals. –	aligns with TMP Goals. –	Mostly aligns with TMP Goals. –	TMP ✓	s not align with TMP Goals. ✗
Secondary Plan Goals (6-meter pedestrian realm and dedicated cyclist facility)	Does not align with Secondary Plan Goals. ✗	Somewhat aligns with Secondary Plan Goals. –	Somewhat aligns with Secondary Plan Goals. –	Fully aligns with Secondary Plan Goals. ✓	Fully aligns with Secondary Plan Goals. ✓	Fully aligns with Secondary Plan Goals. ✓	Does not align with Secondary Plan Goals. ✗	Does not align with Secondary Plan Goals. ✗
SSM Goals (Streetscape and Flexibility)	Does not align with SSM Goals. ✗	Fully aligns with SSM Goals. ✓	Fully aligns with SSM Goals. ✓	Somewhat aligns with SSM Goals. –	Somewhat aligns with SSM Goals. –	Somewhat aligns with SSM Goals. –	Does not SSM Goals. ✗	Somew M
Flexible / Downtown Vibility Goals	Does not provide improved flexibility. ✗	Provides full flexibility. ✓	Provides full flexibility. ✓	Provides improved flexibility. –	Provides improved flexibility. –	Provides improved flexibility. –	Does not provide improved flexibility. ✗	Provides full flexibility ✓
Natural Environmental Goals (Street Trees and Open Planters)	Somewhat aligns with Natural Environmental Goals. –	Does not align with Natural Environmental Goals. ✗	Somewhat Natural Env Gou –	lly aligns with Natural Environmental Goals. ✓	Fully aligns with Natural Environmental Goals. ✓	Fully aligns with Natural Environmental Goals. ✓	Fully aligns with Natural Environmental Goals. ✓	Fully aligns with Natur Environmental Goals. ✓
Desired by Public	Not desired by public. ✗	Not desired by public. ✗	Not desired by public. ✗	Some public support. –	Desired by public. ✓	Desired by public. ✓	Not desired by public. ✗	Desired by public. ✓

Laura: Cycling doesn't feel safe in this option

Laura: this feels safest for cycling

Laura: This owners' over for providing access to overall corridor - both vehicles and bicycles

Streetscape Manual should be better considered - re: angled parking

Secondary Plan and Downtown Streetscape not being represented here =

Rory: leaving things around to create patio space makes things disorienting for people (should not be closing bike paths). Patios should be level with pedestrian spaces. Should not be in parking spaces/bike lanes

Laurine: Smallest patios is 2.75 - need to make sure that patios need to stay accessible. Guelph has pre-approved patio layouts

Rory: none of the scenarios talk about deliveries → Laura: 2 lanes limits deliveries

St. George's Square

Does the preliminary review align with your understanding of the key drivers?

Star 2 elements of biggest concern

Table 4.1 - Preliminary Review of Long Listed Options (St. George's Square)

	1 - Do Nothing	2 – Standard Intersection Improvements	3 – Realigned Four-leg Intersection	4 – Roundabout	5 – Traffic Circle	6 – Public Space (No Vehicle Lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Somewhat aligns with TMP Goals.	Does not align with TMP Goals.
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Desired by Public	Not desired by public.	Some public support.	Some public support.	Not desired by public.	Desired by public.	Desired by public.
Preliminary Recommendation	Required to be Carried Forward	Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward	Recommended to be Carried Forward	Not Recommended to be Carried Forward

St. George's Square

Does the preliminary review align with your understanding of the key drivers?

Star 2 elements of biggest concern

Table 4.1 - Preliminary Review of Long Listed Options (St. George's Square)

	1 - Do Nothing	2 – Standard Intersection Improvements	3 – Realigned Four-leg Intersection	4 - Roundabout	5 – Circle	6 – Public Space (No Vehicle Lanes)
TMP Goals (Dedicated facilities for Transit and Cyclists)	Does not align with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Aligns with TMP Goals.	Somewhat aligns with TMP Goals.	Does not align with TMP Goals.
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Desired by Public	Not desired by public.	Some public support.	Some public support.	Not desired by public.	Desired by public.	Desired by public.